# TruVision DVR 41 User Manual

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CE N4131

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**Class B:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

There is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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# Chapter 1
# Product introduction

## Product overview

This is the TruVision DVR 41(TVR 41) User Manual for models:

**Table 1: Product codes**

| Americas | EMEA |
|---|---|
| TVR-4108-2T | TVR-4104-1TEA |
| TVR-4108-4T | TVR-4104-2TEA |
| TVR-4116-2T | TVR-4108-2TEA |
| TVR-4116-4T | TVR-4108-4TEA |
| TVR-4116-8T | TVR-4116-2TEA |
| TVR-4116-12T | TVR-4116-4TEA |
| | TVR-4116-8TEA |
| | TVR-4116-12TEA |

**Note**: Models are shipped with the power chords for their region.

For regions not listed in Table 1 above, please contact your local supplier.

The TruVision™ DVR 41 (TVR 41) is a versatile, user-friendly embedded digital video recorder (DVR) allowing end-users to record 4, 8, or 16 analog cameras at 4 CIF in real time (25/30 fps), while providing integration with the UTC portfolio of security solutions, and offering a seamless product experience within the TruVision brand.

Its dual streaming functionality allows the user to set up different settings for recording and streaming video in live view mode.

TruVision DVR 41 can fully integrate with the license-free TruVision Navigator software, which is ideal for the most commercial applications. TVR 41's easy and intuitive-to-use web browser interface enables remote configuration and secure viewing, searching, and playing back of video from computers connected via the Internet.

# Chapter 2
# Installation

This section describes how to install the TVR 41 unit.

## Installation environment

When installing your product, consider these factors:

- Ventilation
- Temperature
- Moisture
- Chassis load

**Ventilation:** Do not block any ventilation openings. Install in accordance with the manufacturer's instructions. Ensure that the location planned for the installation of the unit is well ventilated.

**Temperature:** Consider the unit's operating temperature (-10 to +55 ºC, 14 to 131 °F) and noncondensing humidity specifications (10 to 90%) before choosing an installation location. Extremes of heat or cold beyond the specified operating temperature limits may reduce the life expectancy of the DVR. Do not install the unit on top of other hot equipment. Leave 44 mm (1.75 in.) of space between rack-mounted TruVision DVR 41 units.

**Moisture:** Do not use the unit near water. Moisture can damage the internal components. To reduce the risk of fire or electric shock, do not expose this unit to rain or moisture.

**Chassis:** Equipment weighing less than 15.9 kg (35 lb.) may be placed on top of the unit.

## Unpacking the TVR 41 and its accessories

When you receive the product, check the package and contents for damage, and verify that all items are included. There is an item list included in the package. If any of the items are damaged or missing, please contact your local supplier.

Items shipped with the product include:

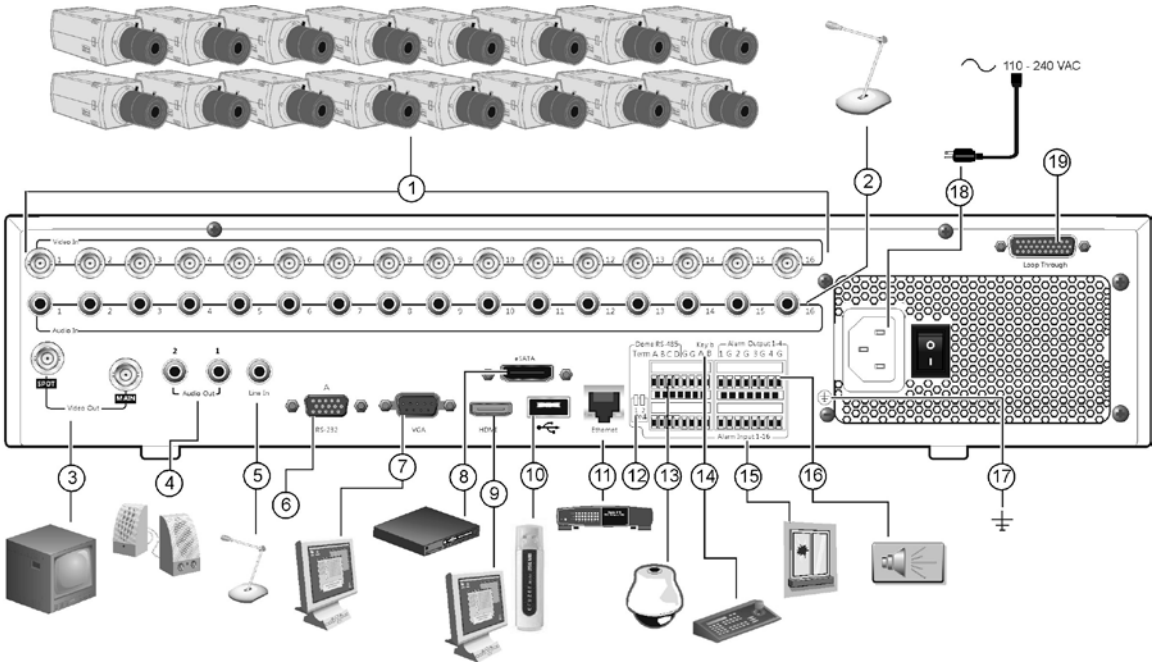
- IR (infrared) remote control
- Two AAA batteries for the remote control
- AC power cords
- USB mouse
- DVR
- Video loop through cable
- CD with software and manuals
- *TruVision DVR 41 Quick Start Guide*
- *TruVision DVR 41 User Manual* (on CD)

# Back panel

Figure 1 on page 5 shows the back panel connections and describes each connector on a typical TVR 41 digital video recorder. Details may vary for specific models.

Before powering up the DVR, connect the cameras and a main monitor for basic operation.

**Figure 1: Back panel connections**




1. Connect up to 16 analog cameras to BNC connectors.
2. Connect audio inputs (available for each camera) to RCA connectors.
3. Connect up to two CCTV monitors (BNC-type connectors):
   - Spot monitor
   - Main monitor
4. Connect to speakers for audio output.
5. Connect RCA connector to a microphone.
6. Connect to a RS-232 device.
7. Connect to a VGA monitor.
8. Connect to an optional eSATA device such as SATA HDD, CD/DVD-RM.
9. Connect to a HDTV. The HDMI connection supports both digital audio and video.
10. Connect to an optional USB device such as a mouse, CD/DVD burner or HDD.
11. Connect to a network.
12. Terminate the line to the dome cameras using this RS-485 switch. Default is Off.
13. Connect to a PTZ control.
14. Connect to a keyboard (KTD-405 shown)
15. Connect up to 16 alarm input cables to relay outputs.
16. Connect up to four alarm relay outputs.
17. Connect to ground.
18. Connect to a power cord.
19. Loop through for up to 16 analog cameras (see item 1).

# PTZ dome camera set up

Use the USB mouse provided or the optional keypad for local telemetry control. If using the TVR 41 over a network, use the web browser to control the PTZ dome cameras or TruVision Navigator.

See Appendix B on page125 for the supported protocols and Appendix F on page 139 for the PTZ commands supported by each protocol.

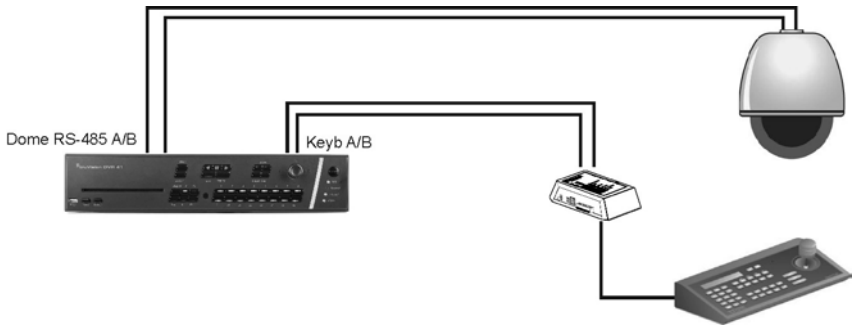
Each PTZ camera must be set up individually. For information on configuring PTZ dome camera settings, see Chapter 6, “Controlling a PTZ camera” on page 39.

## Connecting a TVR 41 to a PTZ dome camera and a keypad

Use the input/output box that is supplied with the keypad to connect a keypad to the TVR 41. The keypad can be connected to a PTZ camera for local control or for control over the network.

See Figure 2 below for the preferred setup. Any PTZ dome camera can be controlled as the DVR is doing the PTZ protocol translation. However, this setup provides only limited dome configuration.

**Figure 2: Connecting a keypad to the TVR 41 for control of a PTZ dome camera over the network**

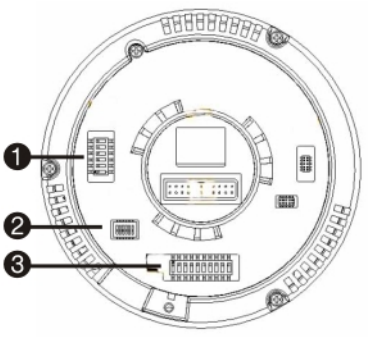
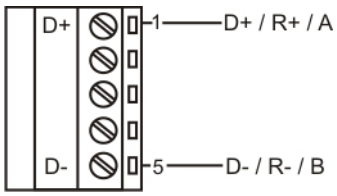
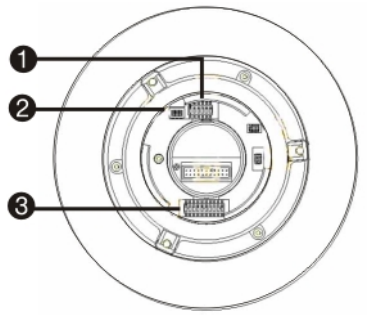
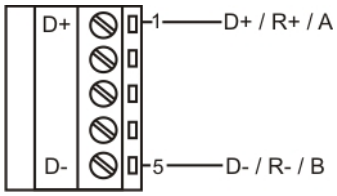


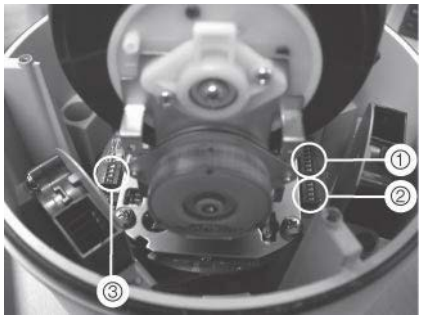
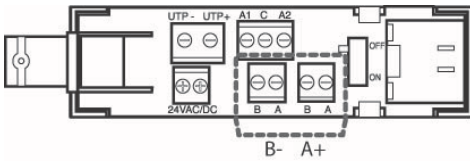
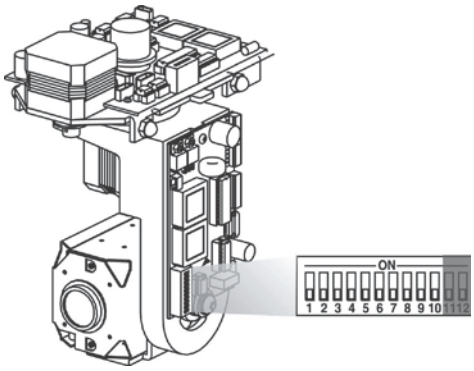
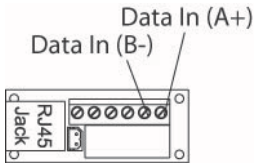

## Configuring the PTZ protocols for Interlogix cameras

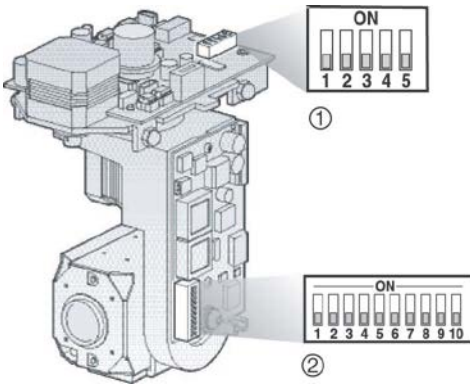
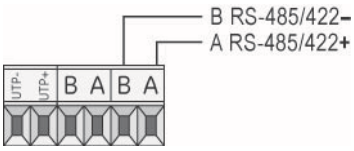
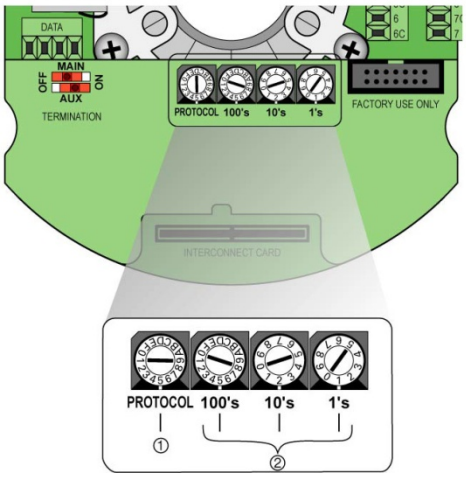
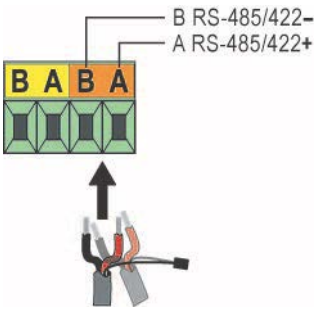
Before the PTZ dome cameras are assembled in their housings, set their protocol and address DIP switches for the TVR 41. See Table 2 on page 7 for different Interlogix PTZ dome camera settings.

If you are using PTZ dome cameras from another company, please refer to their configuration instructions.

**Table 2: PTZ protocols for Interlogix cameras**

| Camera | Switch setting | | |
|---|---|---|---|
| TruVision Mini PTZ 12X: Indoor Dome | Protocol DIP switches: | 000000 |  <br>1. Protocol DIP switches<br>2. RS-485 communication DIP switches<br>3. Camera ID DIP switches |
| | RS-485 communication DIP switches: | 0000000000 | |
| | Camera ID DIP switches: | Select the camera ID DIP switch address as required | |
| | RS-485 data connector: | |  |
| TruVision Mini PTZ 12X: Outdoor Dome | Protocol DIP switches: | 000000 |  <br>1. Protocol DIP switches<br>2. RS-485 communication DIP switches<br>3. Camera ID DIP switches |
| | RS-485 communication DIP switches: | 0000000000 | |
| | Camera ID DIP switches: | Select the camera ID DIP switch address as required. | |
| | RS-485 data connector: | |  |

| Camera | Switch setting | | |
|---|---|---|---|
| TruVision Dome 16X PTZ | Protocol switches: | 0111 |  <br>1. Address switches; 2. Baud switches;<br>3. Protocol switches |
| | Address switches: | Select the camera ID DIP switch address as required. | |
| | Baud rate: | 0000 | |
| | RS-485 data connector: | |  |
| CyberDome | Protocol switches: | NA | |
| | Address switches: | Select the camera ID DIP switch address as required. |  |
| | RS-485 data connector: | |  |

| Camera | Switch setting | | |
|---|---|---|---|
| UltraView PTZ | Protocol switches: | 01000 |  1. Protocol switches;<br>2. Address switches |
| | Address switches: | Select the switch address as required. | |
| | RS-485 data connector: | |  |
| Legend | Protocol switches: | 1 |  |
| | Address switches: | Select the camera ID DIP switch address as required. | |
| | RS-485 data connector: | |  |

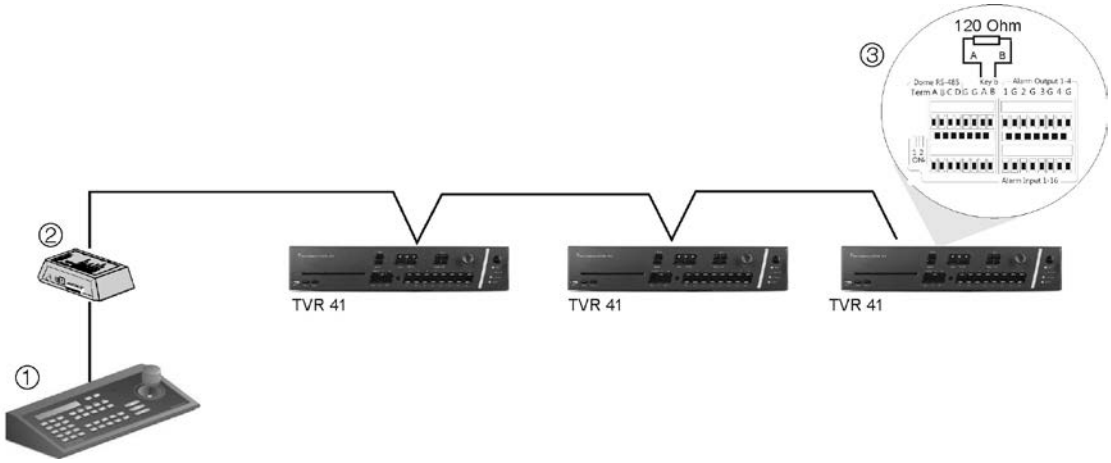
# Wiring the keypad

The keypad uses RS-485 simplex wiring. The signal is transferred by a single twisted pair line. A shielded STP CAT5 network cable is recommended. Ground one end of the cable, either the first or last device on the RS-485 line.

The maximum number of devices that can be installed in one bus is 255, with a maximum cable length of 1200 m. The cable length can be expanded using a signal distributor.

Both the first and the last device in series should be terminated with 120 Ohm resistance to minimize line reflections. See Figure 3 below.

**Figure 3: RS-485 bus serial wiring (KTD-405 keypad shown)**

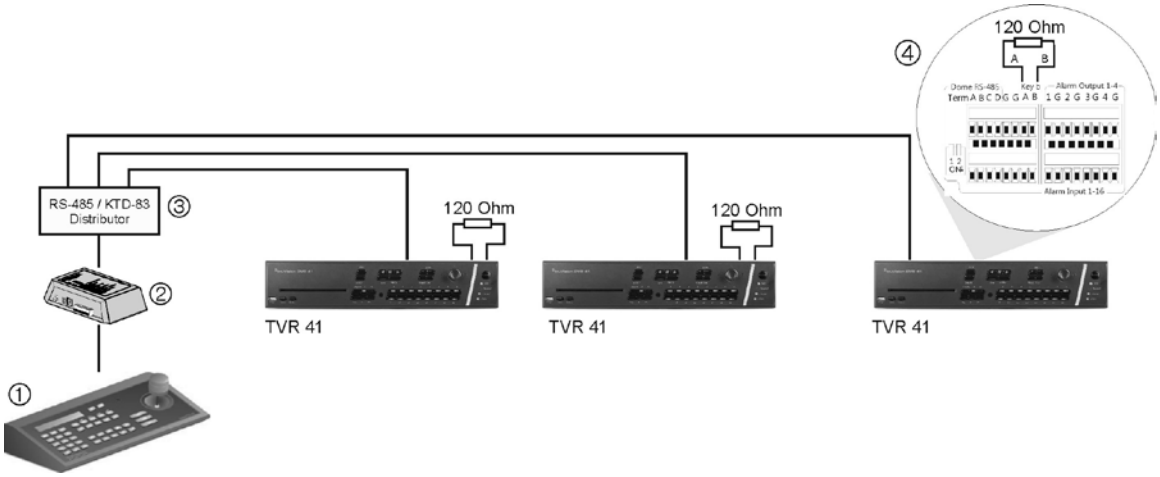



1. Keypad
2. I/O box
3. See section “RS-485 ports” on page 12

Use an RS-485 signal distributor for a star wiring configuration. See Figure 4 on page 11.

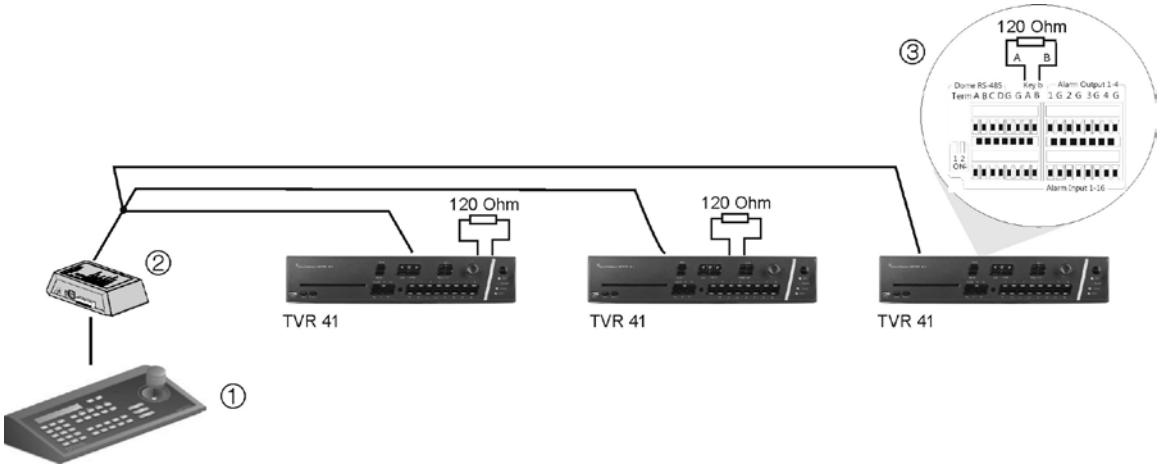
**Figure 4: Star wiring with RS-485 signal distributor**

**Correct:**




1. Keypad
2. I/O box
3. RS-485/KTD-83 distributor
4. See section “RS-485 ports” on page 12

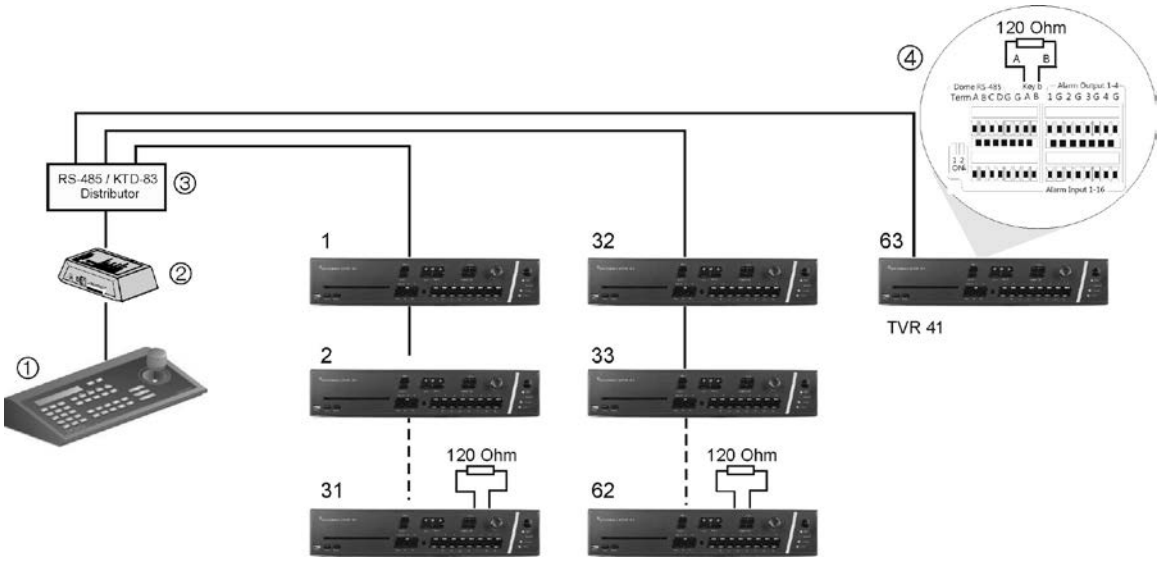
**Incorrect:**




1. Keypad
2. I/O box
3. See section “RS-485 ports” on page 12

Use an RS-485/KTD-83 signal distributor to increase the maximum number of devices on the bus as well as the total range. Each distributor output provides another RS-485 bus, extending the output an additional 1200 m. Up to 31 TVR 41s can be connected to each output. See Figure 5 on page 12.

**Figure 5: Expanding the system with an RS-485 signal distributor**




1. Keypad
2. I/O box
3. RS-485/KTD-83 distributor
4. See section “RS-485 ports” below

**Caution:** Most signal distributors are unidirectional. This means that the signal only flows from the input towards the outputs. Consequently it is not possible to connect several keypads.

See section “RS-485 ports” below to configure the RS-485 port communication settings.

# RS-485 ports

There are two RS-485 ports on the rear panel of the DVR. See Figure 6 on page 13 for the serial pin outs.

- **Dome RS-485**:

  A and B: Connect pan, tilt, zoom control of PTZ dome cameras. A = +, B = -

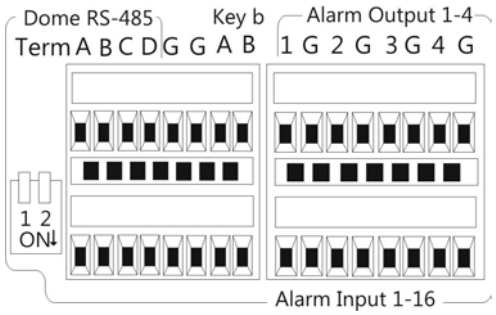
  C and D: Not used

  G: Ground of dome camera

  G: Ground of keypad

- **Keyb**: Connect the keypad.

**Figure 6: RS-485 pins**




# RS-232 port

Use the RS-232 port to connect CBR-PB3-POS (point-of-sale) and ATM devices to the DVR.

# Monitor connections

Connect the unit to the monitors via 75-ohm video coaxial cables with BNC connectors. The unit provides a 1 Vp-p CVBS signal. See Figure 1 on page 5 for connecting a monitor to a TVR 41.

The TVR 41 supports up to 1280 × 1024 / 60 Hz resolution in VGA. The monitor resolution should be at least 800 × 600. Adjust your monitor accordingly to this resolution.

# Loop through

You can loop through the analog cameras to equipment such as a matrix, monitors or a second DVR. There are 16 numbered loop-through BNC outputs. See Figure 1 on page 5.

# Audio inputs and output

The unit is equipped with 16 audio inputs and two audio outputs. Both the audio output and the audio inputs are line-level. Each 16 audio input is associated with one of the 16 cameras.

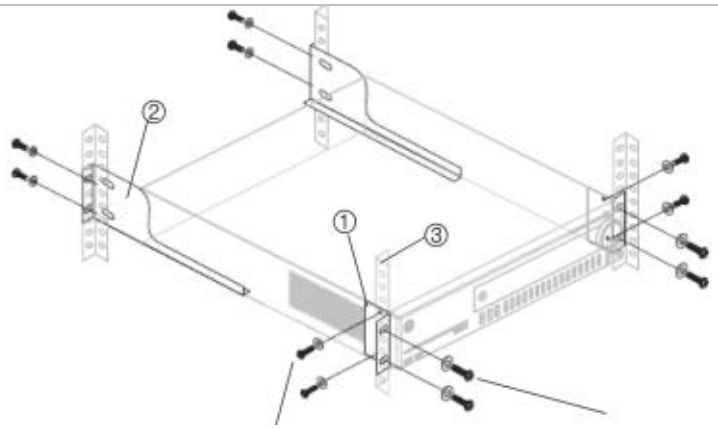
| | |
|---|---|
| Audio input | RCA jack, 315 mV, 40 kohms. Unbalanced |
| Audio output | RCA jack, 315mV, 600 ohms. Unbalanced |

**Note**: Line-level audio requires amplification.

# Brackets

The DVR is easily rack-mountable with the purchase of the TVR-RK-1 rack-mount kit. See Figure 7 below. Contact your local supplier to order it.

**Figure 7: Rack-mount installation**




Attach the small front rack ears to the unit (screws supplied)

Attach the DVR to the front rails (screws not included)

### To install the racks:

1. Attach the two small front-rack mount ears to the DVR (screws supplied).
2. Attach the two large rear support brackets (not supplied) to the rear rails.
3. Attach the DVR to the front rails (screws not supplied).

**Caution:**
Do not rack-mount the TVR 41 without the rear rails installed. Failure to install the rear rails can damage the DVR.

# Chapter 3
# Getting started

## Turning on and off the DVR

Before starting the power up process, connect at least one monitor to the video out or the VGA interface. Otherwise, you will not be able to see the user interface and operate the device. Also connect at least one camera.

The TVR 41 auto-detects the video mode (PAL or NTSC) on startup.

It is equipped with a universal power supply that will auto-sense 110/240 V, 60/50 Hz.

**Note:** It is recommended that an uninterruptible power supply (UPS) is used in conjunction with the device.

**To turn on the DVR:**

Turn on the DVR using the power switch on the back panel. The power LED turns blue. A splash screen appears on screen showing the status of the HDD.

Once the TVR 41 is powered up, the indicator bar on the front panel will light up green. All connected cameras are displayed on-screen. The TVR 41 automatically begins recording.

**To turn off the DVR:**

1. In live view mode, right-click the mouse and click **Menu**. The main menu screen appears.
2. Select the **Power Manager** icon.
3. In the Shutdown popup menu, select **Shutdown**. Click **Yes** to confirm shutdown.

**To reboot the DVR:**

1. In live view mode, right-click the mouse and click **Menu**. The main menu screen appears.
2. Select the **Power Manager** icon.
3. In the Shutdown popup menu, select **Reboot**. Click **Yes** to confirm shutdown.

# Using the setup wizard

The TVR 41 has an express installation wizard that lets you easily configure basic DVR settings when first used. It configures all cameras simultaneously. The configuration can then be customized as required.

By default the setup wizard will start once the DVR has loaded. It will walk you through some of the more important settings of your DVR.

Any changes you make to a setup configuration page are saved when you exit the page and return to the main wizard page.

**To quickly set up the TVR 41:**

1. Connect all the devices required to the back panel of the DVR. See Figure 1 on page 5.
2. Turn on the unit using the power switch on the front panel. After the boot up screen, the DVR displays video images on screen.
3. Select the preferred language for the system from the dropdown list and then click **Next**.
4. Enable or disable the option to start the wizard automatically when the DVR is turned on. Click **Next**.
5. **Administrator configuration**:

   Navigate to the Admin Password edit box and click the edit box with the mouse, or press Enter on the front panel or remote control, to display the virtual keyboard. Enter the default admin password, 1234.

   **Note:** You must enter an admin password. To change the Admin password, check **New Admin password** and enter the new password and confirm it.

   ---

   **Caution**: It is strongly recommended that you change the password of the administrator. Do not leave 1234 as the default password. Write it down in a safe place so that you do not forget it.
   If you should forget the password to your DVR, contact your supplier with the serial number of your DVR to obtain a secure code to reset your DVR.

   ---

   Click **Next**.
6. **Time and date configuration**:

   Select the desired time zone, date format, system time and system date.

**Note**: The system time and date are visible on screen. However, they do not appear in recordings.

Click **Next** to move to the next page, or **Previous** to return to the previous page.

7. **Network configuration**:

   Configure your network settings such as the NIC type, IP address, subnet mask and default gateway. Enter the preferred DNS server address as well as the alternate one to use.

   Click **Next** to move to the next page, or **Previous** to return to the previous page.

8. **HDD management**:

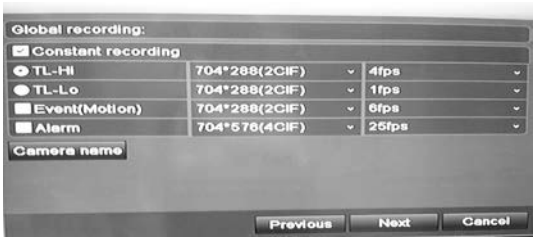
   Configure your HDD settings as required.

   You can group HDDs and assign cameras to a group. See “Setting HDD groups” on page 98 for further information. You can also set up a drive for redundant recording. See “Configuring redundant recording” on page 79.

   After configuring your HDD settings, click **Initialize** and **Next** to move to the next page, or **Previous** to return to the previous page.

9. **Recording configuration**:

   Configure your recording settings as required. The settings apply to all cameras connected to the DVR.




   Check the **Constant Recording** checkbox for the DVR to record continuously all day. If left unchecked, the DVR will not record.

   Check the **TL-Hi** check box and select its image resolution and frame rate.

   Check the **TL-Lo** check box and select its image resolution and frame rate.

   To record motion detection events, check **Event (Motion)** and select the image resolution and frame rate.

   To record alarm events, check **Alarm** and select the image resolution and frame rate.

Under **Camera name** enter the camera name. A soft keyboard will appear to enter the characters.

10. When all the required changes have been entered, a page appears showing all the settings.

Click **Finish** to exit the Wizard. The TVR 41 is now ready to use.

# Chapter 4
# Operating instructions

## Controlling the TVR 41

There are several ways to control the DVR:

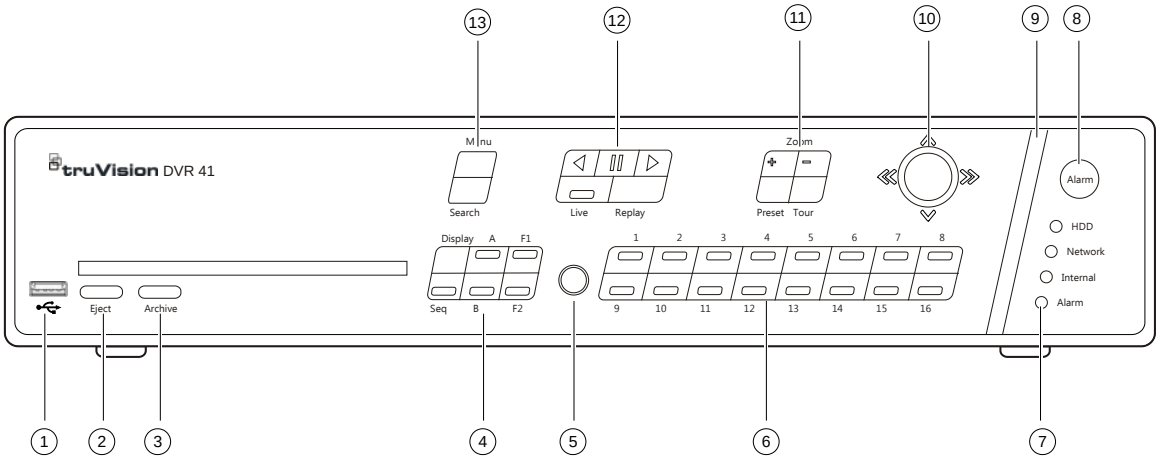
- Front panel control
- Mouse control
- IR remote control
- KTD-405 / TVK-505U keypad control (see Appendix)
- Web browser control

You can use your preferred control method for any procedure, but in most cases we describe procedures using mouse terminology. Optional control methods are given only when they differ substantially from mouse control methods.

## Using the front panel

The function buttons on the front panel control can be used to operate many, but not all, of the main functions of the DVR. The LED indicators light up or flash to alert you of various conditions. The functions available can be limited by setting passwords. See Figure 8 on page 20 for more information.

**Figure 8: Front panel**




The controls on the front panel include:

| Item | Name | Description |
|---|---|---|
| 1. | USB port | Universal serial bus (USB) port for additional devices such as USB mouse and USB hard disk drive (HDD). |
| 2. | Eject button | Ejects CD/DVD disc. |
| 3. | Archive button | Press once to enter quick archive mode. Press twice to start archiving. |
| 4. | Display buttons | **Display**: Toggles through the various multiviews: full, quad, 1+5, 1+7, 9, and 16.<br>**Sequence**: Starts/stops sequencing in live view mode.<br>**A**: Selects monitor VGA/A in live view mode<br>**B**: Selects monitor A/B in live view mode<br>**F1**: In all-day playback, click to start and stop video clipping.<br>**F2:**In live view mode, click to display/hide the time bar.<br>In all-day playback, click to hide/display the playback control toolbar. |
| 5. | IR receiver | Receiver for IR remote. |
| 6. | Numeric buttons | Switch between different cameras in live, PTZ control or playback modes. |
| 7. | Status LEDs | **HDD:** Green indicates the DVR is working correctly. Red indicates a fault.<br>**Network:** Green indicates the network is working correctly. Red indicates a fault or no network connection.<br>**Internal:** Green indicates the Watchdog is working correctly. Red indicates that the Watchdog is reporting a fault.<br>**Alarm:** Green indicates no external alarm. Red indicates an external alarm status or motion. |
| 8. | Alarm button | Use to manually acknowledge an alarm. |
| 9. | Alarm indicator bar | Blinking red indicates that there is an alarm. |

| Item | Name | Description |
|---|---|---|
| 10. | Joystick | Use to select options in a menu and to control playback. Press for Enter. Press LED arrows are lit when the jog is active.<br>**Live view mode:** Press Enter to enter/exit PTZ mode.<br>**Menu mode:** Move the joystick left/right and up/down to position cursor in menu screen. Press for Enter.<br>**Playback mode:** Move the joystick left/right to slow down or speed up playback. Move it up/down to jump forwards or backwards by 30 seconds. Press Enter to stop/start playback.<br>**PTZ mode:**<br>Rotate the joystick to control the movement of the PTZ dome camera. Move the joystick left/right to slow down or speed up PTZ. Move it up/down to jump forwards or backwards by 30 seconds. |
| 11. | PTZ buttons | **Zoom**: Use + and – for digital zoom.<br>**Preset**: Call up preprogrammed preset positions.<br>**Tour**: Call up preprogrammed shadow tours. |
| 12. | Playback buttons | : Jump back to the oldest available video and starts the playback.<br>: Pause playback.<br>: Instantly playback the currently selected file. Default time is 1 minute.<br>**Live**: Switch to live view mode.<br>**Replay**: Replay the current file in playback Starts at the beginning of the file. |
| 13. | Menu and Search buttons | **Menu:** Enter/exit the main menu.<br>**Search:** Enter the advanced search menu. |

# Using the mouse

The USB mouse provided with the TVR 41 can be used to operate all the functions of the DVR, unlike the front panel which has limited functionality. The USB mouse lets you navigate and make changes to settings in the user interface.

Connect the mouse to the TVR 41 by plugging the mouse USB connector into the USB port on the back panel. The mouse is immediately operational and the pointer should appear.

**Note:** Use a USB 1.1 or higher mouse.

Move the pointer to a command, option, or button on a screen. Click the left mouse button to enter or confirm a selection.

You can purchase a spare mouse by ordering part number TVR-MOUSE-1 TruVision™ DVR Model 40/41/60 Mouse.

See Table 3 below for a description of the mouse buttons.

**Table 3: Mouse buttons**

| Item | Description | |
|---|---|---|
| Left button | Single-Click | **Live view**: Select a camera to display the quick access toolbar (see “Accessing frequently used commands” on page 33).<br>**Menu**: Select a component of a menu, such as a button or an input field. This is similar to pressing the Enter button on the remote/front panel controls. |
| | Double-Click | **Live view**: Switch between single screen and multi-screen mode in live/ playback mode. |
| | Click and Drag | **Live view**: Drag channel/time bar.<br>**PTZ control**: Adjust pan, tilt and zoom.<br>**Tamperproof, privacy masking and motion detection functions**: Select the target area.<br>**Digital zoom-in**: Drag and select target area. |
| Right button | Single-Click | **Live view**: Display menu.<br>**Menu**: Exit the current menu and return to higher level. |
| Scroll-wheel | Scroll Up | **Live view**: Return to the previous screen.<br>**Menu**: Move the selection to the previous item. |
| | Scroll Down | **Live view**: Move to the next screen.<br>**Menu**: Move the selection to the next item. |

# Using the IR remote control

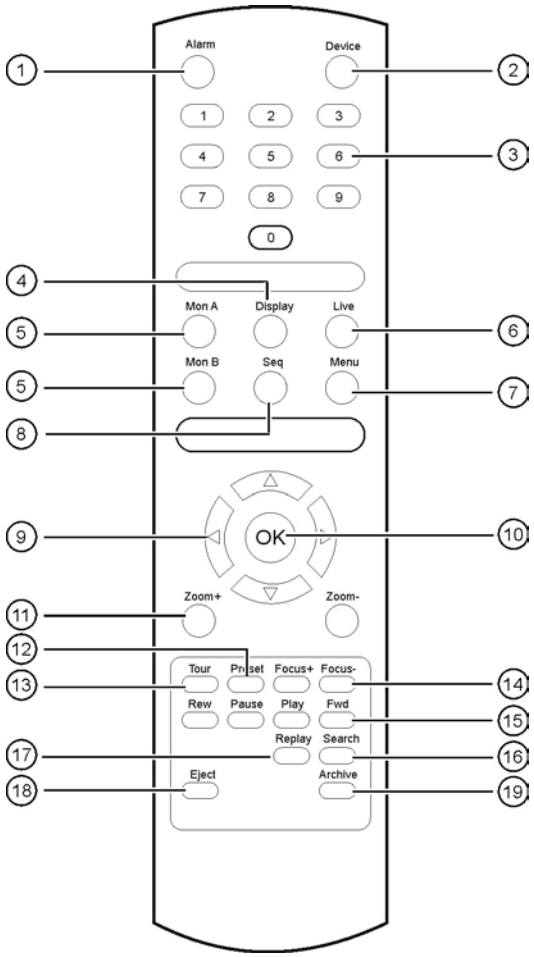
The TVR 41 is supplied with an infra red (IR) remote control unit. Like the mouse, it can be used to operate all of the main functions of the TVR 41.

The IR remote control can be programmed with a unique device ID address so that the controller will only be able to communicate with DVRs with that address. No programming is necessary if using a single TVR 41.

The device ID address only applies when using a remote control and not when using a keypad.

You can purchase a remote control by ordering part number TVR-REMOTE-1 TruVision™ DVR Model 40/41/60 IR Remote Control.

**Figure 9: IR remote control**




| Item | Description |
|---|---|
| 1. Alarm | Acknowledge an alarm. |
| 2. Device | Enable/disable the IR remote control to control the TVR 41. |
| 3. Numeric buttons | Select a camera, and enter a number in a menu option. |
| 4. Display | Switch between the different multiviews. |
| 5. Mon A and Mon B | Switch between monitors A and B. |
| 6. Live | Return to live view mode. |
| 7. Menu | Activate the main menu. |
| 8. Seq | Start /stop sequencing. |
| 9. <, >, ^, v | In Menu mode: Use left or right arrow buttons to select and up or down arrow buttons to edit entry.<br>In PTZ mode: Use to control PTZ.<br>In Playback mode: Use to control playback speed. |
| 10. OK | Confirm selection. |
| 11. Zoom + and - | Use to control zoom of camera lens. |
| 12. Preset | Enter preprogrammed three-digit code to call up a preset. |
| 13. Tour | Enter preprogrammed three-digit code to call up shadow tour. |

| Item | Description |
|---|---|
| 14. Focus + and - | Use to control focus of camera lens. |
| 15. Playback control | Use to control playback (Rewind, Pause, Play, and Fast Forward). |
| 16. Search | Open the Search menu. |
| 17. Replay | Replay the selected file from the beginning. |
| 18. Eject | Eject the CD or DVD disk. |
| 19. Archive | Press once to enter quick archive mode. Press twice to start archiving. |

Aim the remote control at the IR receiver located at the front of the unit to test operation.

**To connect the remote control to the TVR 41:**

1. Press the **Menu** button on the front panel or right-click the mouse and select the **Menu** button. The main menu screen appears.
2. Click **Display Mode Settings** > **Monitor**.
3. Check the device address value. The default value is 255. This device address is valid for all IR controls.

   **Note**: The device address applies to both IR remote controls and keypads.
4. On the remote control press the **Device** button.
5. Enter the device address value. It must be the same as that on the TVR 41.
6. Press the **Enter** button on the remote or front panel.

**To place batteries into the IR remote control:**

1. Remove the battery cover.
2. Insert the batteries. Make sure that the positive (+) and negative (−) poles are correctly placed.
3. Replace the battery cover.

**Troubleshooting the remote control:**

If the IR remote control is not functioning properly, perform the following tests:

- Check the battery polarity.
- Check the remaining charge in the batteries.
- Check that the IR remote control sensor is not masked.

If the problem still exists, please contact your administrator.

# Menu overview

The TVR 41 has an icon-driven menu structure that allows you to configure the unit's parameters. Each command icon displays a screen that lets you edit a group of settings. Most menus are available only to system administrators.

The screen is divided into three sections. The currently selected command icon and submenu item are highlighted in green. See Figure 10 below.

You must be in live view mode to access the main menu.

**Figure 10: Menu structure**

1. **Menu toolbar**: Setup options available for the selected menu function. Move the mouse over a command icon and click to select it. See Table 4 below for a description of the icons.
2. **Submenu panel**: Submenus for the selected menu function are displayed. Click an item to select it.
3. **Setup menu**: All the details for the selected submenu are displayed. Click a field to make changes.

**Table 4: Description of the menu toolbar icons**

| Icon | Name | Description |
|---|---|---|
| | Display mode settings | Configures display settings including dwell time, schedule, language and display formats. See "Configuring live view" on page 35 and "Holiday schedules" on page 77. |
| | Camera management | Configures camera settings including motion detection, video image adjustments, camera title, and copy settings to other cameras. See Chapter 14 "Camera settings" on page 103. |
| | Video schedule | Configures recording settings including recording schedules, record quality, auto delete mode, and recording mode. See Chapter 10 "Recording" on page 73. |
| | Network settings | Configures standard network settings including IP address, e-mail notifications, DDNS setup, and advanced network settings. See Chapter 12 "Network settings" on page 89. |

| Icon | Name | Description |
|---|---|---|
| | Alarm settings | Configures alarm settings including alarm input, relay output, video loss, remote alert, pre-alarm and post-alarm seconds. See Chapter 11 “Alarm settings” on page 81. |
| | PTZ settings | Configures PTZ settings. See Chapter 6 “Controlling a PTZ camera” on page 39. |
| | User management | Configures users, passwords, and access privileges. See Chapter 16 “User management” on page 113. |
| | System settings | Configures system settings including system date and time, audio output, device name, RS-485 settings, RS-232 settings, firmware upgrade, hard drive settings, boot log, and shutdown. See Chapter 13 “HDD management” on page 97 and Chapter 15 “DVR management” on page 107. |
| | Help information | Provides reference information to the various toolbars, menus, and keys within the interface. |
| | Power manager | Provides access to logout, reboot and shutdown options. See “Turning on and off the DVR” **on page** 15. |

**To access the main menu:**

1. In live view press the **Menu** button on the remote control or front panel.

   - Or -

   Right-click the mouse and select **Menu** from the pop-up menu.

   The main menu screen appears. The Display screen appears by default.
2. Click the required menu icon to display its submenu options. Modify the configuration parameters as required.
3. Click **Apply** to save the settings.
4. Click **Back** to return to live view.

## Using the soft keyboard

A keyboard will appear on-screen when you need to enter characters in a screen option. Click a key to input that character.

**Figure 11: The soft keyboard**

Description of the keys in the virtual keyboard:

| | |
|---|---|
| | Switch to lowercase/uppercase |
| | Space |
| | Exit the soft keyboard |
| | Alphanumeric characters |
| | Backspace |
| | Symbols |
| | Confirm selection |

## Exiting the main menu

Press the **Menu** button on the front panel to exit the current menu screen and return to live view or click **Back** in a main menu.

# Chapter 5
# Live view

## Description of live view

Live view mode is the normal operating mode of the unit where you watch live images from the cameras. The TVR 41 automatically enters into live view mode once powered up. On the viewer, you can see the current date and time, camera name, and whether a recording is in progress.

### Status information

Information on the system and camera status is displayed as icons on the main and spot monitors. The camera status icons are shown for each camera. Each icon represents information on a specific item. These icons include:

**Table 5: Description of the on-screen status icons**

| Icon | Description |
|---|---|
| | Indicates a sensor alarm. |
| | Indicates recording (such as manual recording, motion detection or alarm-triggered recording). |
| | Indicates a motion detection event. |
| | Indicates a video loss event. |
| | Indicates alarm and system notifications. Clicking the icon opens a screen that lists the alarms and notifications. |

More than one icon can be displayed at the same time.

The system status is displayed on the front panel by the status LEDs.

# Switching monitors

The TVR 41 can be connected to up to two monitors. However, only one monitor can be controlled at a time. You can select from which monitor to display the cameras in live view.

The DVR automatically checks the monitor outputs used. If more than one monitor is connected, it then defines which monitor is the main one and which is the auxiliary. The priority level for main and spot outputs is HDMI > VGA > CVBS. See Table 6 below.

**Table 6: Monitor output priority level**

| Monitor output in use | | | Priority level | |
|---|---|---|---|---|
| **HDMI** | **VGA** | **CVBS** | **Main monitor** | **Spot monitor** |
| X | | X | HDMI | CVBS |
| | X | X | VGA | CVBS |
| | | X | CVBS | |

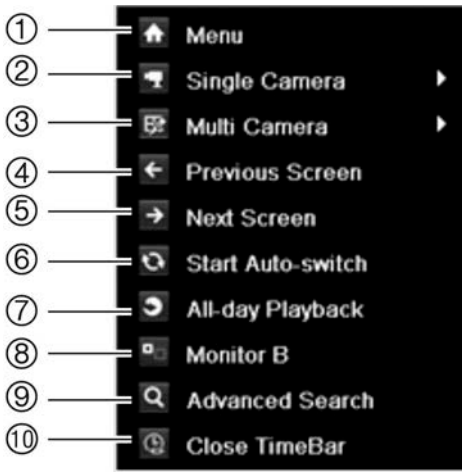
**To select a monitor:**

On the front panel press button A to select the main monitor. Press button B to select the spot monitor.

# Controlling live view mode

Many features of the live view mode can be quickly accessed by placing the cursor on a live image and clicking the right-button of the mouse. The mouse menu appears (see Figure 12 on page 31).

**Figure 12: The mouse menu for the main monitor**




The list of commands available depends on which monitor is active; main or spot (monitor B). See Table 7 below. The default settings of these commands are provided in Appendix G, “Default menu settings” on page 139.

**Table 7: Mouse menu for monitor A (main monitor)**

| Item | Name | Description |
|---|---|---|
| 1. | Menu | Enter the Main menu.<br>This option is not available from monitor B. |
| 2. | Single camera | Switch to a full-screen view for the selected camera from the dropdown list. |
| 3. | Multi camera | Switch between the different multiview options from the dropdown list. |
| 4. | Previous screen | Displays the previous camera. |
| 5. | Next screen | Displays the next camera. |
| 6. | Start auto-switch | Turn on sequence mode. The screen automatically sequences between cameras. See “Viewing in multiview” on page 32.<br>Go to Menu > Display Mode Settings > Layout > Dwell Time to set up. |
| 7. | All-day playback | Playback the recorded video of the selected day from the selected camera. The current day is selected by default. See “All-day playback” on page 50 for more information. |
| 8. | Monitor B | Switch between monitors A (main) and B (spot). |
| 9. | Advanced search | Enter the advanced video search menu. See “Searching recorded video” on page 51 for more information. |
| 10. | Close timebar | Open/close the time bar. |

**Note**: When the monitor B is active, the main monitor commands are unavailable.

**Table 8: Mouse menu for monitor B (spot monitor)**

| Item | Name | Description |
|---|---|---|
| 1. | Single camera | Switch to a full-screen view for the selected camera from the dropdown list. |
| 2. | Multi camera | Switch between the different multiview options from the dropdown list. |
| 3. | Previous screen | Displays the previous camera. |
| 4. | Next Screen | Displays the next camera. |
| 5. | All-day playback | Playback the recorded video of the selected day from selected cameras. See “All-day playback” on page 50 for more information. |
| 6. | Monitor A | Switch between monitors A (main) and B (spot). |

# Multiview format

The DVR has full screen display format as well as five multiview formats.

## Viewing in full screen

Press the numeric button on the front panel to switch to the corresponding camera display. For example, press button 10 to view camera 10.

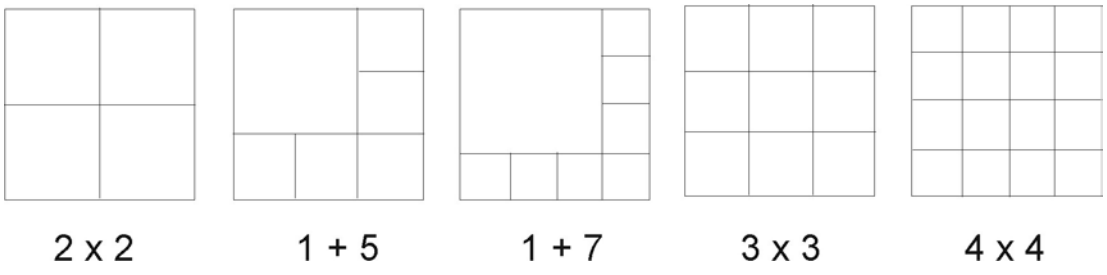
Right-click the mouse and select **Single Camera** from the menu. Select the camera required from the list.

## Viewing in multiview

A video tile is any cell in a multiview display. A camera image can only be shown in one video tile at a time. The TVR 41 has five multiview display formats available as well as full screen. See Figure 13 below.

To change the multiview display that appears by default, go to the Display menu. See “Changing the camera sequence” on page 36 for more information.

**Figure 13: Multiview display formats**



**To select a multiview format:**

1. Press the Display button on the front panel to cycle through different display formats.

   You can also right-click the mouse and select **Multi Camera** from the menu. Select the desired multiview display layout.

# Sequencing cameras

The sequencing feature allows a camera to be displayed briefly on screen, before advancing to the next camera in the sequence list. Sequencing can only be done in full screen mode.

The default sequence displays each camera in numerical order. However, each camera on the main and spot monitors can have a pre-programmed dwell time and sequence order. See “Changing the camera sequence” on page 36 for more information.

**Note**: Dwell time must not be set to zero for sequencing to function.

**Sequencing live view mode using the front panel:**

1. Select the camera where you want to start sequencing.
2. Press the **Seq** button on the front panel to start sequencing.
3. Press the **Seq** button again to stop the sequencing.

**Sequencing live view mode using the mouse:**

1. Select the camera where you want to start sequencing.
2. Right-click the mouse and select **Start auto-switch** to start the sequencing.
3. Right-click the mouse and select **Stop auto-switch** to stop the sequencing.

# Accessing frequently used commands

The quick access toolbar in live view lets you quickly access regularly used commands. Position the cursor over a video image and left- click the mouse. The toolbar appears (see Figure 14 on page 34).

**Figure 14: Quick access toolbar**

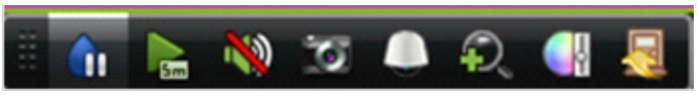


**Table 9: Description of the quick access toolbar icons**

| Icon | Description |
|---|---|
| | **Freeze**: Freeze the live image of the selected camera. Although the image pauses, time and date information does not. The system clock continues to run. |
| | **Instant playback**: Playback the recorded video from the last five minutes. If no recording is found, then there was no recording made in the last five minutes.<br>Click the icon and select the desired camera. Click OK. |
| | **Audio**: Enable/Disable audio output. The audio option must already have been setup in the Display menu. |
| | **Quick snapshot**: Capture a snapshot of a video image. The image is saved on the unit. |
| | **PTZ control**: Enter PTZ control mode. |
| | **Digital zoom**: Enter digital zoom. See “Digital zoom” below for further information. |
| | **Image settings**: Enter the image settings menu to modify the image lighting levels. There are two options:<br>**Preset Mode:** These are preconfigured image lighting levels. Select one of the four options depending on current lighting conditions:<br>- *Standard*: Use in standard lighting situations.<br>- *Indoor*: Use indoors.<br>- *Dim Light*: Use when the light level is low.<br>- *Outdoor*: Use when outdoors. The contrast and saturation values are high.<br>**Customize**: Modify brightness, contrast, saturation, and hue values.<br>**Restore**: Restore image settings to previous values.<br>These settings can also be modified from the Camera>Image menu (see page “Adjusting video image settings” on page 105. |
| | **Close toolbar:** Close the shortcut toolbar. |

## Digital zoom

You can easily zoom in or out of a camera image in live view mode and playback using the digital zoom command. The zoom command magnifies the camera image four times. See Figure 15 on page 35.

**Figure 15: Digital zoom screen**

**To quickly zoom in/out on a camera image:**

1. Select the camera you wish to use.
2. Left-click the mouse and select the digital zoom icon, or on the front panel press the **Zoom+** button. The digital view screen appears.
3. Left-click the mouse and drag the red square to the area of interest, or move the joystick on the front panel to position the red square. The selected area is magnified.
4. To exit digital zoom right-click the mouse or press the **Zoom—** button on the front panel.

# Configuring live view

The setup of live view can be modified from the main menu to suit different needs, such as the different monitors, multiview layout, and dwell time options. You can also enable audio output.

**Figure 16: Layout screen**

**Table 10: Description of the layout screen**

| Submenu name | Description |
|---|---|
| **General tab** | |
| Video output interface | Select which monitor will be the main monitor: HDMI (depends on DVR model), VGA, main CVBS and spot output.<br>Default is VGA, if connected. |
| Live view mode | Select which multiview layout will be default in live view mode. Default is 4x4 multiview layout. |
| Dwell time | Set the length of time for which a camera image is displayed on the selected monitor before moving to the next camera during sequencing. Default is off (“No switch”). |
| Enable audio out | You can hear audio from cameras in both live and playback mode. However, in order to be able to hear audio in playback you must enable the audio output setting.<br>Check the box to enable/disable audio output. |
| Even output | Select which monitor will be the spot monitor. Default is B monitor. |
| Full screen monitoring dwell time | Set the length of time for which an alarm event appears on the spot (B) monitor before moving to the next camera during sequencing. Default is 10 seconds. |

### To set up the display options:

1. Click the **Display Mode Settings** icon in the menu toolbar.
2. Select **Layout** > **General**.
3. Specify the desired settings for each of the menu options.
4. Click **Apply** to save the settings.
5. Click **Back** to return to live view.

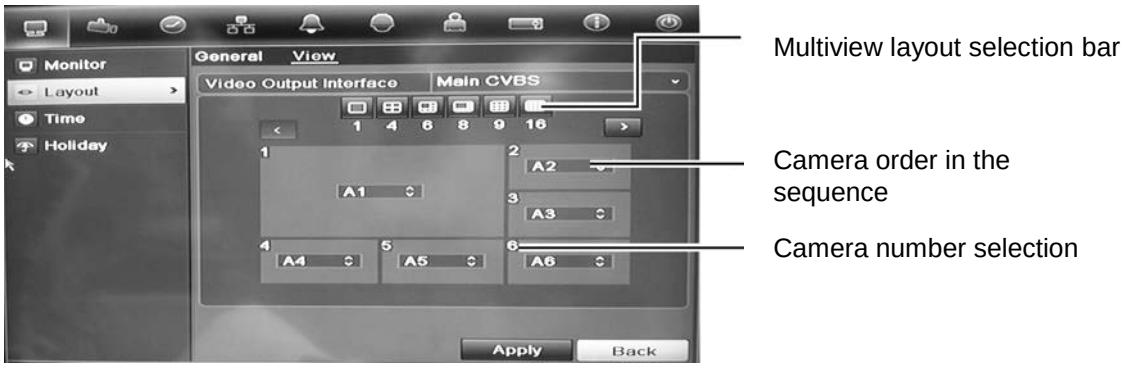
## Changing the camera sequence

The cameras are sequenced in numeric order by default. You can change the sequence order of the cameras for all monitors.

You can switch the channel of a camera with that of another camera in the system. This lets you, for example, have the images of camera 1 appear on channel 10, and the images of camera 10 appear on channel 1. This feature is useful when you want to watch the sequence of images from specific cameras so that they are next to each other on-screen.

See Figure 17 below. Each video tile displays both the order of the camera in the sequence and the camera number.

**Figure 17: Camera layout and sequence screen**




**To set the camera sequencing:**

1. Click the **Display Mode Settings** icon in the menu toolbar.
2. Select **Layout** > **View**.
3. From **Video Output Interface**, select the desired monitor from the drop-down list.
4. From the multiview layout selection bar, select the desired multiview layout.
5. Select the video tile of the camera whose order you want to change. The selected tile is highlighted green.
6. In the selected tile, select the new camera sequence order by scrolling the through the list of available camera numbers.

   **Note:** "X" means that the camera is not displayed.
7. Click **Apply** to save the settings.
8. Click **Back** to return to live view.

# V-stream encoding

If the available bandwidth is limited, you can remotely view several channels in real time over the web browser or CMS (Client Management System) using the V-stream encoding option ("V" stands for "virtual"). When enabled, you can see all the channels in one screen.

**Note**: It is recommended to only use a HDMI or VGA monitor as main monitor when using this function. If a BNC monitor is used as main monitor, only the image seen on the main monitor will be seen and not that of the V-stream.

**To enable v-streaming:**

1. Click the **Video Schedule** icon in the menu toolbar.
2. Select **Encoding** > **V-stream Encoding**.
3. Check **Enable V-stream Encoding**.
4. Select the desired settings for frame rate, maximum bit rate mode, and maximum bit rate.
5. Click **Apply** to save the settings.

# Chapter 6
# Controlling a PTZ camera

You can control PTZ dome cameras using the buttons on the front panel, the keypad, and IR remote control as well as using the PTZ control panel accessed with the mouse. Access to PTZ commands may require a password.

A detailed list of the PTZ commands available for many different camera protocols is available in Appendix F on page 139.

## Configuring PTZ settings

Use the **PTZ Settings** menu to configure the PTZ dome cameras. Each camera must be set up individually. Cameras must be configured before they can be used.

Ensure that the PTZ dome cameras are correctly connected to the RS-485 port on the back panel.

**Note:** If a camera does not work correctly after configuring the DVR, check the parameters entered.

**To configure PTZ dome camera settings:**

1. Click the **PTZ Settings** icon in the menu toolbar.
2. Click **General** and select the PTZ dome camera to be configured from the drop-down camera list.
3. Select the baud rate, data bit, stop bit, parity, flow control, PTZ protocol and address for the camera. See Appendix G, “Default menu settings”, on page 139 for the default values.

   **Note:** It is important to ensure that the settings correspond with those used in the PTZ camera.
4. Click **Copy** to copy the settings to another camera, if required.
5. Click **Apply** to save the settings.

# Calling up presets, tours and shadow tours

When in live view you can quickly call up the list of existing presets, preset tours and shadow tours by using the front panel, remote control, mouse and keypad.

| | |
|---|---|
| Front panel | Press the joystick to Enter. PTZ control panel appears. |
| Mouse | Right-click the mouse on the desired camera image. The quick access toolbar appears. Click the PTZ control icon to enter PTZ mode. The PTZ control panel appears. |
| Remote control | Press the OK button. The PTZ control panel appears. |
| Keypad | Press the Enter ↵ button on the keypad. For further information, see Appendix C “TVK-505U keypad” on page 127 and Appendix D “KTD-405 keypad” on page 129. |

If the display was in multiview format, it changes to full screen format for the selected camera. See Figure 18 below for a description of the PTZ control panel.

**Figure 18: PTZ control panel**

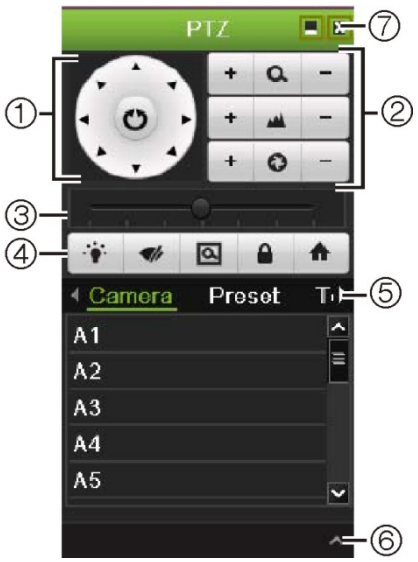



**Table 11: Description of the PTZ control panel**

| Item | Name | Description |
|---|---|---|
| 1. | Directional pad/auto-scan buttons | Controls the movements and directions of the PTZ. Center button is used to start auto-pan by the PTZ dome camera. |
| 2. | Zoom, focus and iris | Adjusts zoom, focus and iris. |
| 3. | PTZ movement | Adjusts the speed of PTZ movement. |
| 4. | Toolbar | Turns on/off camera light. |
| | | Turns on/off camera wiper. |
| | | Zoom area. |
| | | Centers the PTZ dome camera image. This command is not supported on all PTZ dome cameras. |

| Item | Name | Description |
|---|---|---|
| | | Jumps to the home position. |
| 5. | Select PTZ command | Displays the desired function from the scroll bar: camera, preset, preset tour or shadow tour. |
| 6. | Open/close menu | Opens/closes the PTZ command section of the PTZ control panel. |
| 7. | Exit | Exits the PTZ control panel. |

# Setting and calling up presets

Presets are previously defined locations of a PTZ dome camera. It allows you to quickly move the PTZ dome camera to a desired position. They are configured and modified from the PTZ configuration window (see Figure 19 below).

**Note:** The PTZ dome camera used must be able to support a preset command. See Appendix F on page 139 for the complete list of PTZ commands available by camera protocol.

**Figure 19: PTZ configuration window**

**Table 12: Description of the PTZ configuration window**

| Item | Name | Description |
|---|---|---|
| 1. | Save preset | Saves preset. |
| 2. | Call preset | Calls up pre-existing preset. |
| 3. | Shadow tour toolbar | Starts recording the shadow tour. |
| | | Saves the shadow tour. |
| | | Starts the selected shadow tour. |
| | | Deletes the selected shadow tour. |

| Item | Name | Description | |
|---|---|---|---|
| 4. | Preset tour toolbar | | Adds a step to a selected preset tour. |
| | | | Starts the selected preset tour. |
| | | | Stops the selected preset tour. |
| | | | Deletes all the preset tour steps. |
| | | | Scroll up the list. |
| | | | Scroll down the list. |

**To set up a preset:**

1. Click the **PTZ Settings** icon on the menu toolbar and select **More Settings**.
2. Use the directional, zoom, focus and iris buttons to position the camera in the desired preset location.
3. Check **Save Preset** and enter a preset number. The preset is enabled and stored in the camera.

   If the desired preset number is larger than the 17 numbers listed, click **[…]**. The Preset screen appears. Select a preset number from the dropdown list and click the **OK** button to save changes.

   **Note**: Presets can be overwritten.
4. Click **Back** to return to live view.

**To call up a preset:**

- **PTZ control panel:**

1. In live view left-click the mouse and select the PTZ control icon in the quick access toolbar. The PTZ control panel appears. Select the desired camera from the toolbar.

   – Or –

   On the front panel, select the desired camera and press **Enter** on the joystick to call up the quick access toolbar. The PTZ control panel appears.
2. Scroll the toolbar to **Preset** and double-click the desired preset from the list. The camera immediately jumps to the preset position.

- **Menu toolbar:**

1. Click the **PTZ Settings** icon on the menu toolbar and select **More Settings**. The PTZ configuration window appears.
2. Check **Call Preset** and enter the preset number to call up. The camera immediately moves to that preset position.
3. Click **Back** to return to live view.

# Setting and calling up preset tours

Preset tours move a PTZ dome camera to different steps (called “Keypoint” in the interface). The camera stays at a step for a set dwell time before moving on to the next step. The steps are defined by presets (see “Setting and calling up presets” on page 41.)

Each preset tour consists of steps. A step consists of a step number, a dwell time, and a speed.

The step number is the order the camera will follow while cycling through the preset tour. The dwell time is the length of time for which a camera stays at a step before moving to the next one. The speed is the rate at which the camera will move from one key point to the next.

**Note:** The PTZ dome camera used must be able to support a preset tour command. See Appendix F on page 139 for the complete list of PTZ commands available by camera protocol.

**To set up a preset tour:**

1. Click the **PTZ Settings** icon on the menu toolbar and select **More Settings**.
2. Select the preset tour number.
3. In the preset tour toolbar, click to add a step to the preset tour. The Keypoint window appears. Select the preset number, dwell time and speed of the step. Click **OK** to save the settings.

**Note**: A preset tour should have at least two presets.

4. Repeat step 3 to configure other steps (“Keypoints”) in the preset tour.

5. In the preset tour toolbar, click to call up the preset tour.
6. Click **Back** to return to live view.

**To delete a preset tour:**

1. Click the **PTZ Settings** icon on the menu toolbar and select **More Settings**.
2. From the preset list, select a tour number and click to delete the selected the preset tour.

   – Or –

   In the preset tour toolbar, click to delete all the preset tours.
3. Click **Back** to return to live view.

**To call up a preset tour:**

- **PTZ control panel:**

1. In live view left-click the mouse and select the PTZ control icon in the quick access toolbar. The PTZ control panel appears. Select the desired camera from the toolbar.

   – Or –

   On the front panel, select the desired camera and press **Enter** on the joystick to call up the quick access toolbar. The PTZ control panel appears.
2. Scroll the toolbar to **Tour** and double-click the desired preset tour from the list. The camera immediately carries out the preset tour movement.

- **Menu toolbar:**

1. Click the **PTZ Settings** icon on the menu toolbar and select **More Settings**.
2. Select the desired preset tour from the list and click to start the tour. Click to stop the preset tour.
3. Click **Back** to return to live view.

# Setting and calling up a shadow tour

The shadow tour command remembers the manually-controlled PTZ dome camera movement track. One shadow tour can be set up.

**Note:** The PTZ dome camera used must be able to support a shadow tour command. See Appendix F on page 139 for the complete list of PTZ commands available by camera protocol.

**To set up a shadow tour:**

1. Click the **PTZ Settings** icon on the menu toolbar and select **More Settings**.
2. Select the shadow tour from the list.
3. To record a new shadow tour, click and use the directional buttons on the PTZ control panel to move the camera along the desired path.
4. Click to save the shadow tour.

**Note**: The shadow tour can be overwritten.

5. Click **Back** to return to live view.

**To call up a shadow tour:**

- **PTZ control panel:**

1. In live view left-click the mouse and select the PTZ Control icon in the quick access toolbar. The PTZ control panel appears. Select the desired camera from the toolbar.

   – Or –

   On the front panel, select the desired camera and press **Enter** on the joystick to call up the quick access toolbar. The PTZ control panel appears.

2. Scroll the toolbar to **Shadow Tour** and double-click the shadow tour from the list. The camera immediately carries out the shadow tour movement.

- **Menu toolbar:**

1. Click the **PTZ Settings** icon on the menu toolbar and select **More Settings**.
2. Select the shadow tour from the list and click to start the tour. Click to stop the shadow tour.
3. Click **Back** to return to live view.

# Chapter 7
# Playing back a recording

The TVR 41 lets you to quickly locate and play back recorded video. There are four ways to play back video:

- Instant playback of the most recently recorded video
- All-day playback of the day's recorded video
- Search the video archives by specific time, date, bookmark, snapshot or event
- Search the system log

The DVR continues to record the live view from a camera while simultaneously playing back video on that camera display. You must have the access privilege to play back recordings (see "Customizing a user's access privileges" on page 114 for more information).

Cameras in multiview mode play back simultaneously. This means, for example, that it is easy to follow the path of an intruder who has passed in front of several cameras.

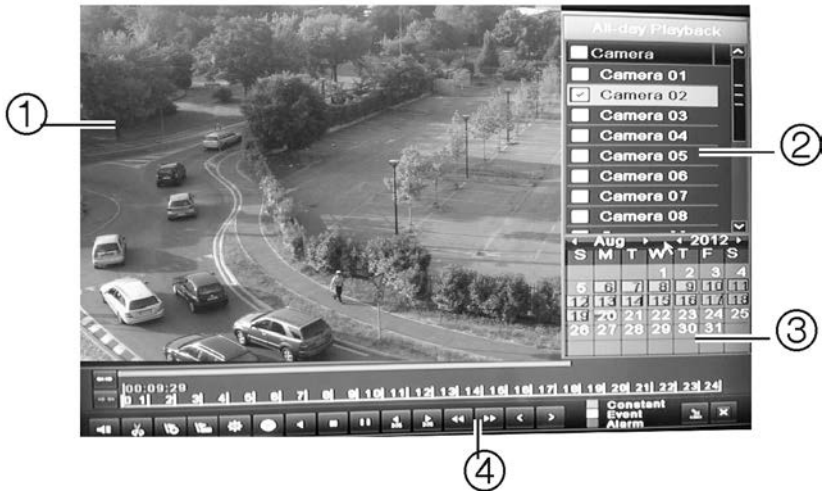
You must be in live view mode to play back video.

## Overview of the playback window

It is easy to manage playback from the playback window.

The playback video has a time/date stamp on it for evidentiary purposes.

**Figure 20: Playback window**



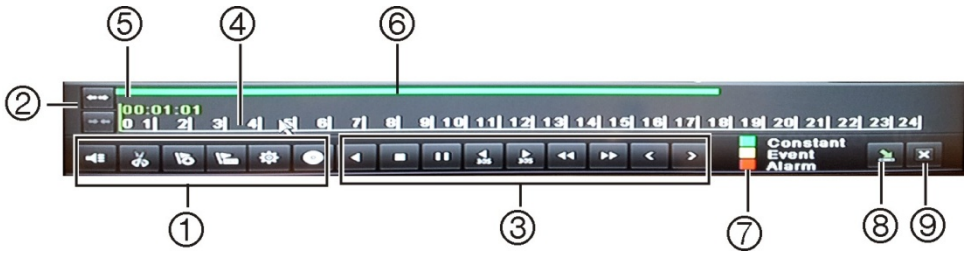

1. Playback viewer with time/date stamp.
2. Camera panel. Select the cameras for playback. Move the mouse over the area to display the list of cameras available.
3. Calendar panel.
   Blue: Current date
   Yellow: Recordings available on the DVR.
4. Playback control toolbar. See Figure 21.

## The playback control toolbar

It is easy to manually control playback using the playback control toolbar. See Figure 21 below.

**Note**: The control toolbar does not appear for instant playback.

**Figure 21: Playback control toolbar (all-day playback example shown)**




| Item | Description | |
|---|---|---|
| 1. | **Audio and video control toolbar:** | |
| | / | Audio on/off. |
| | / | Start/stop a video clip during playback. Sections of a recording can be saved to an external storage device. |
| | | Add default bookmark |
| | | Add customized bookmark |
| | | Bookmark management.<br>Click to see the list of bookmarks and their times. |
| | | Archive files |

| Item | Description | |
|---|---|---|
| 2. | **Zoom control**: Zoom in and out of the timeline to show the progress bar in greater or lesser detail. | |
| 3. | **Playback control toolbar**: | |
| | | Reverse play the recording. Click again to pause. |
| | | Stop playback. Timeline jumps back to 00:00 time (midnight). |
| | | Play recording. |
| | | Fast forward playback by 30 seconds. |
| | | Reverse playback by 30 seconds. |
| | | Decrease playback speed: Options available are: single frame, 1/8 speed, ¼ speed, ½ speed, normal, X2 speed, X4 speed, X8 speed, maximum speed. |
| | | Increase playback speed. Options available are: single frame, 1/8 speed, ¼ speed, ½ speed, normal, X2 speed, X4 speed, X8 speed, maximum speed. |
| | | Previous file/day/event recording. |
| | | Play next file/day recording in the search result. |
| 4. | **Timeline**: Allows you to jump forwards or backwards in time. The timeline moves left (oldest video) to right (newest video). Click a location on it for where you want playback to start.<br>In all-day playback the cursor shows the actual time. In search playback, the cursor is a ball. | |
| 5. | **Time bar**: Time of actual playback. This is only displayed in all-day playback. | |
| 6. | **Playback progress bar**: This bar displays how far playback of the recording has progressed. It also indicates the type of recording. | |
| 7. | **Recording type**: Description of the color coding of recording types that appear in the playback progress bar. Green indicates continuous recording. Red indicates alarm/event recording. Yellow indicates motion recording. | |
| 8. | Hide the playback control toolbar. | |
| 9. | For all-day playback mode, quit playback and return to live view.<br>For playback from search mode, quit playback and return to the search screen. | |

# Instant playback

Use the quick access toolbar to quickly replay recorded video from the last five minutes. This can be useful to review an event that has just happened. Only one camera at a time can be selected. The default playback period of 5 minutes cannot be changed.

**To instantly replay recorded video:**

1. In live view mode left-click the mouse on the desired camera image. The quick access toolbar appears. Click **Instant Playback** .
2. Select the desired camera from the drop-down list and click **OK**.

   Playback starts immediately. The Instant Playback scroll bar appears under the selected camera.

3. Click **Pause** on the toolbar to pause playback.

   Click **Play** to restart playback.

   Click **Stop** to stop playback and return to live view.

# All-day playback

Use this option to play back recorded video from the last day. Playback starts at midnight and runs for the 24-hour period. All-day playback is shown in full screen view. See Figure 21 on page 48 for a description of the playback control toolbar.

**• Using the mouse:**

1. In live view mode right-click the mouse on the desired camera image. In the mouse toolbar click **All-day Playback**.

   The playback screen appears. By default, the camera is in full-screen mode.
2. To select more than one camera for multiview playback or to select playback from a different day, move the mouse to the right edge of the screen. The camera list and calendar appear. Check the desired cameras and/or another day. Up to 16 cameras can be selected.

   Playback starts immediately.

   **Note:** A message appears if there are no recordings found during this period.
3. Use the playback control toolbar to manually control playback.
4. Click **Exit** to return to live view.

   – Or –

Right-click the mouse and click **Exit** from the mouse menu to return to the previous screen.

**• Using the front panel:**

1. Select the camera for playback and press the **Replay** button. Playback from the selected camera starts immediately.

   **Note:** Multiview playback is only available using the mouse. If live view was showing multiview, only the camera in the top-left channel on screen will be played back.

2. To select a different camera for playback, press the numerical button of the desired camera.
3. Click **Live** to return to live view.

# Searching recorded video

You can easily search and play back recorded videos by time, events, bookmarks, and video clips.

The Search window has four submenus that allow you to carry out different searches by theme:

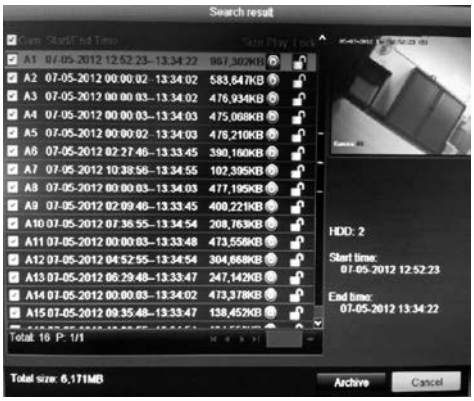
| Search type | Description |
|---|---|
| Normal | Search all recorded video by cameras, recording type, type of file protection (locked or unlocked) and time period. |
| Event | Search only event recorded files. Files can be searched by alarm inputs, motion detection, or POS/ATM text insertion.<br>**Note**: Only motion detection and POS/ATM text insertion that have been recorded as events will be listed in this search. Motion and text insertion that is recorded as a non-event can be searched under the Normal menu. |
| Bookmark | Search only recorded files with bookmarks. |
| Snapshot | Search only recorded files with snapshots. |

## Search results

A search will usually produce a list of files, which may extend to several pages. The files are listed by camera, and then for each camera by date and time. The oldest file is listed first. See Figure 22 on page 52 for an example of a search.

Only one file can be played back at a time.

**Figure 22: Example of a search result list**




# Playing back recordings by time and video type

You can search recorded video by time and video type, such as continuous recordings, motion, text insertion, alarm and all recordings. Video can be played back simultaneously across several cameras.

**To play back search results:**

1. In live view mode right-click the mouse and in the mouse menu select **Advanced Search** > **Normal**.
2. Select the desired cameras, record type, file type as well as start and end time of the recording.
3. Click **Search**. The list of search results appears.
4. Play back the search results:

   If there is only one camera in the search result, click its playback button. Playback starts.

   If there is more than one camera listed, click the playback button of one of the cameras. In the window that appears, select the cameras you want to play back simultaneously and click **OK**. Playback starts.
5. To hide the playback control toolbar during play back, right-click the mouse and select the **Control Panel** button in the playback control toolbar. Click again for the panel to reappear.
6. Use the playback control toolbar to manually control playback.
7. To play back another camera, move the cursor to the right edge of the screen to display the list of cameras and select the desired camera.
8. To do another search:

   Click **Exit** in the playback control toolbar to return to the search results screen.

- Or -

Right-click the mouse and select **Exit** from the list to return to the search results screen.

- Or -

Right-click the mouse and select **Video Search** from the list to return to the search screen.

# Playing back recordings by event

You can search recorded video by event type: motion, alarm input and POS/ATM text insertion. Video can be played back simultaneously across several cameras.

**To play back search results:**

1. In live view mode right-click the mouse and in the mouse menu select **Advanced Search** > **Event**.
2. Select the desired event type as well as start and end time of the recording.
3. Select the desired alarm inputs.
4. Click **Search**. The list of search results appears.
5. Play back the search results:

   If there is only one camera in the search result, click its playback button. Playback starts.

   If there is more than one camera listed, click the playback button of one of the cameras. In the window that appears, select the cameras you want to play back simultaneously and click **OK**. Playback starts.
6. To hide the playback control toolbar during playback, right-click the mouse and select the **Control Panel** button in the playback control toolbar. Click again for the panel to reappear.
7. Use the playback control toolbar to manually control playback.
8. To play back another camera, move the cursor to the right edge of the screen to display the list of cameras and select the desired camera.
9. To do another search:

   Click **Exit** in the playback control toolbar to return to the search results screen.

   - Or -

   Right-click the mouse and select **Exit** from the list to return to the search results screen.

   - Or -

Right-click the mouse and select **Video Search** from the list to return to the search screen.

# Creating and playing back bookmarked recordings

You can bookmark the important scenes in a recorded file for later reference.

Bookmarks flag the start of a scene. Up to 64 bookmarks can be saved in a video file. There are two types of bookmarks:

- **Default bookmark** : All default bookmarks have the same generic name, “Bookmark”.
- **Customized bookmark** : The bookmark is given a name for easy identification. The same name can be used for several bookmarks.

Both types can be searched.

**To create a bookmark:**

1. Open an all-day playback screen or the playback screen from a search result.
2. In the all-day playback recording, click the timeline bar where you want the bookmark to be. The green time line jumps to this position. Click the button for the type of bookmark you want, and enter the bookmark name if required.

   In the playback recording from a search, click the scroll bar where you want the bookmark to be. The scroll bar ball jumps to this position. Click the button for the type of bookmark you want, and enter the bookmark name if required. The bookmark is saved.
3. Click the bookmark management  button to see the list of bookmarks saved. The name of a bookmark can be edited. The bookmark can also be deleted.

**To play back a bookmark:**

1. In live view mode right-click the mouse and select **Advanced Search > Bookmark** in the mouse menu.
2. Select the desired cameras as well as start and end time of the recording to be searched. Also select the type of bookmark to be searched.

   If searching for customized bookmarks, enter a keyword from the bookmark name.

   Click **Search**. The list of bookmarks appears.
3. Select a bookmark and do one of the following:

   Click the **Edit** button to edit a bookmark’s name.

   Click the **Delete** button to delete a bookmark.

- Or -

Click the **Play** button to play back a bookmark.

4. When finished, click **Exit**.

# Slideshow of snapshots

You can search recorded for video snapshots. See “Accessing frequently used commands” on page 33 on how to create snapshots.

**To play back search results:**

1. In live view mode right-click the mouse and in the pop-up menu select **Advanced Search** > **Snapshot**.
2. Select the desired cameras as well as start and end time of the recording to be searched.
3. Click **Search**. The list of snapshots appears.
4. Select a snapshot to see it in the thumbnail window. Click its **Play** button to see it in full-screen mode.
5. When in full-screen mode, move the cursor to the right edge of the screen to see the complete list of snapshot s found in the search. Click their Play buttons to see them in full-screen mode.
6. To see a slideshow of all the snapshots found, click the ▶ or ◀ buttons on the snapshot toolbar to sequence forwards or backwards through the shots.
7. To do another search:

   Click **Exit** in the snapshot toolbar to return to the search results screen.

   - Or -

   Right-click the mouse and select **Exit** from the list to return to the search results screen.

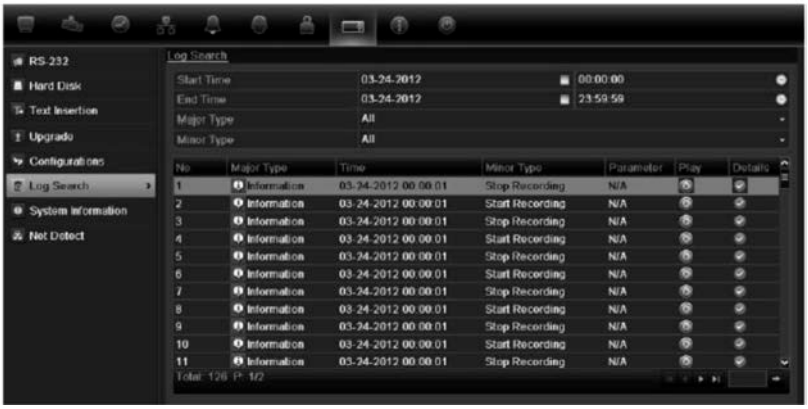
   - Or -

   Right-click the mouse and select **Snapshot Search** from the list to return to the search screen.

# Playing back recordings from the system log

You can also playback recordings from the system log. The system log provides a much wider range of options for playback than Advanced Search, which deals with video detection and alarms only.

**Figure 23: View log screen**


RS-232
Hard Disk
Text Insertion
Upgrade
Configurations
Log Search
System Information
Net Detect
Log Search
Start Time 03-24-2012 00:00:00
End Time 03-24-2012 23:59:59
Major Type All
Minor Type All
No. Major Type Time Minor Type Parameter Play Details
1 Information 03-24-2012 00:00:01 Stop Recording N/A
2 Information 03-24-2012 00:00:01 Start Recording N/A
3 Information 03-24-2012 00:00:01 Stop Recording N/A
4 Information 03-24-2012 00:00:01 Start Recording N/A
5 Information 03-24-2012 00:00:01 Stop Recording N/A
6 Information 03-24-2012 00:00:01 Start Recording N/A
7 Information 03-24-2012 00:00:01 Stop Recording N/A
8 Information 03-24-2012 00:00:01 Start Recording N/A
9 Information 03-24-2012 00:00:01 Stop Recording N/A
10 Information 03-24-2012 00:00:01 Start Recording N/A
11 Information 03-24-2012 00:00:01 Stop Recording N/A
Total: 126 P: 1/2

**To play back video from the system log:**

1. Click **System Settings** > **Log Search** in the menu toolbar.
2. Select the search start and end times.
3. Under **Major Type** and **Minor Type**, select an option from the drop-down list. The minor type list of options available depends on the option selected under major type.
4. Click the **Search** button. A list of results appears.
5. Select a file and click:

   - **Details**: Displays information on the log or recording. For a recording, it lists such information as start time, type of information, camera number, and gives a description on the types of events recorded and when record time was stopped.

   - **Play**: Click to start playback of the selected recording.

   - **Export**: Click to archive the selected file to a USB device. The export screen appears.

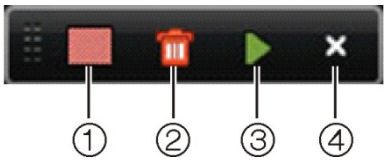
   - **Back**: Click to return to the previous screen.

# Motion search

You can quickly and easily search playback recording for incidents of motion detection. Motion can be searched over the whole playback screen or just for specific areas on it. This allows you to search, for example, whether any motion was detected a few days ago near a particular door.

The option is not available in instant playback.

**Figure 24: Motion search toolbar**




1. **Full screen detection**: The motion-sensitive red grid automatically appears over the whole screen.
2. **Delete all**: Delete the motion grid.
3. **Search**: Search the playback recording for motion detection.
4. **Exit**: Quit motion search mode and return to play back.

**To search for motion in playback:**

1. In playback mode right-click the mouse and click **Motion Search** on the mouse menu. The motion search toolbar appears and the playback control toolbar disappears.
2. Select an area of the screen to be searched:

   Drag the mouse over the desired area. A red grid appears. More than one area can be selected.

   - Or -

   Click the full-screen detection icon in the toolbar. The whole screen is covered in the red grid.
3. Click the **Search** icon to see the results.

   Motion appears as bleu lines below the green playback progress bar. If motion had been recorded as an event, it appears as yellow on the progress bar.

   Click the **zoom-in** button to see the progress bar in closer detail.

# Playing back frame-by-frame

You can easily play back a selected video at different speeds. This allows you to carefully examine an event frame-by-frame as it happens.

The current frame rate is shown on the right of the playback control toolbar.

**To play back frame-by-frame:**

**• Using a mouse:**

1. In playback mode click the **Speed Down** ◀◀ **and Speed up** ▶▶ buttons in the playback control toolbar until the speed changes to single frame.
2. Click the **Pause** button to advance the video frame by frame.

**• Using the front panel:**

1. In playback mode move the joystick to left and right to scroll down and up through the speed changes until single frame.
2. Press **Enter** with the joystick to advance the video frame by frame.
3. Press the **Playback** button to continue playback at normal speed.

# Digital zoom in playback

You can easily zoom in on an image during playback to see it in greater detail.

**To digitally zoom-in during playback:**

1. In playback mode right-click the mouse and click **Digital Zoom** in the pop-up menu. The playback control toolbar disappears.
2. Click the screen with the cursor.

   The image zooms in and the digital view screen appears.
3. Left-click the mouse and drag the red square to the area of interest, or move the joystick on the front panel to position the red square. The selected area is magnified.
4. Right-click the mouse to quit the digital zoom mode and to return to full-screen playback mode. The playback control toolbar reappears.

# Chapter 8
# Archiving recorded files

Archive recorded files on an external device such as a USB flash drives, USB HDDs, eSATA HDD or a DVD writer. You must be in live view mode to archive video. Access to archive commands may require a password.

Before starting to archive files, ensure that you have the backup device connected to the DVR. It can be detected automatically by the DVR.

**Note:** The USB port on the rear panel does not support USB CD/DVD burners or USB HDDs.

## Archiving files

There are two ways to archive files:

**Quick Archive**: Quick archive lets you archive recorded files quickly by using the Archive button on the front panel. The TVR 41 then downloads all the recorded files on the unit to fill the available memory space on the media. This option is not available via the mouse.

**Advanced Search screen:** Use the Export command in the Advanced Search screen to specify archiving settings such as a specific time and date period as well as cameras.

### Using Quick Archive

**To archive recorded video using Quick Archive:**

1. Insert the backup device into the TVR 41.

   If using a USB memory drive, insert the device into the USB port on the front panel. If using a digital video disk (DVD) or eSATA drive, insert the disc into the DVD drive. If more than one media type is found in the TVR 41, the USB device takes precedence over the others.

2. Press **Archive** on the front panel or remote control to open the quick archive screen.

3. Click **Start**. The unit starts to download all the files listed.

**Note**: If there is a capacity limitation on the backup device, only the most recent files will be backed up.

A message will appear to confirm when the download is complete.

## Exporting recorded files to a backup device

You can insert a mini-USB hub to the USB port to attach a mouse for navigation or a USB drive for archiving. However, the unit may not support all types of USB hubs.

The Archive options available may depend on the type of backup device selected.

**Figure 25: Example of an archive**

| Item | Function | Description |
|---|---|---|
| 1. | Device name | Select one of the storage media for archiving. If the backup device is not recognized:<br>• Click the Refresh button<br>• Reconnect device<br>• Check for compatibility from vendor |
| 2. | Refresh | Refresh the search results if any parameters have been modified. |
| 3. | Name | Files found on the backup device are listed. |
| 4. | Delete | Click to delete a selected file from the backup device. |
| 5. | Play | Click to play selected file. |
| 6. | Free space | Free space available on the backup device is displayed. |
| 7. | Seal disc | Select to prevent other files being recorded onto the disc. |
| 8. | Include Player | Select to automatically include the Player tool when archiving files. |
| 9. | New folder | Create a new folder on the backup device. Files from the DVR can be archived to a specific folder. |

| Item | Function | Description |
|---|---|---|
| 10. | Format | Format the USB/eSATA drive. |
| 11. | Archive | Start downloading selected files onto the backup device. |
| 12. | Cancel | Cancel search and return to previous menu. |

**To export recorded files to a backup device:**

1. Connect the backup device to the DVR.

   If using a USB memory drive, insert the device into the USB port on the front panel. If using a digital video disk (DVD) or eSATA drive, insert the disc into the DVD drive. If both media are found in the TVR 41, the USB device takes precedence over the DVD.
2. In live view mode press the **Search** button on the front panel or remote control.

   - Or -

   Right-click the mouse and select **Advanced Search**.

   The Advanced Search screen appears.
3. Select the cameras and search parameters required.
4. Click **Search**. The list of results appears.
5. Select the files to export.

   **Note:** You can click the Play button to verify that the selected files are the files to export.
6. Click **Archive**. The Archive screen appears.
7. Select the storage medium to export to from the drop-down list.
8. Click **Archive** to begin the backup process.

# Creating and archiving video clips

You can save important scenes in a recorded file for later reference by creating video clips of selected portions of the file during playback. When an intruder, for example, crosses in front of several cameras you can save the video clip of the intruder's path across these cameras in a single file.

Up to 30 video clips can be made from a recording.

**Note:** This feature is only available using the mouse.

**To export video clips during playback:**

1. Connect the backup device to the DVR.
2. Search for the required files to play back. See "Searching recorded video" on page 51.

3. Select the file or files to play back and click **Play**. Playback starts immediately.
4. Click the playback timeline where you want the video clip to start and click the **Start Clip** button.
5. Click the playback timeline where you want the video clip to stop and click the **End Clip** button.
6. Repeat for additional clips.
7. Exit playback mode. A message appears asking if you want to save the video clips.
8. Click **Yes** to archive the clips. The Export screen appears.

   Click **No** to exit and return to the search results screen. The clips are not saved.
9. In the Export screen select from the drop-down list the backup device to be used.
10. Click **Start**. File downloading starts.

    **Note:** You can create a new folder for the video clips. Press the **New Folder** button and enter the folder name.

# Archiving snapshots

You can save all the video snapshots recorded to a backup device.

**To archive snapshots:**

1. Connect the backup device to the DVR.
2. Search for the required snapshot files to play back. See “Slideshow of snapshots” on page 55. The list of snapshots appears.
3. Select the snapshots to backup.
4. Click **Archive**. Select the archiving device, if different from that listed.
5. Click **Archive**. Export starts immediately.
6. When completed, click **OK**. Click **Cancel** to return to the previous screen.

# Managing backup devices

You can manage backup devices from the Export screen (see Figure 25 on page 60.)

The Export screen allows you to:

- **Create New Folder:** Create a new folder on the backup device.
- **Delete:** Delete a file or folder from the backup device.
- **Play:** Play the selected video file from the backup device.
- **Format:** Format the backup device.
- **Erase:** Erase files from a re-writable CD/DVD.

# Playing back archived files on a PC

Use the standard file player software to play back the archived video on your PC. It is downloaded automatically from the TVR 41 when archiving files onto a backup device.

# Chapter 9
# Using the web browser

This chapter describes how you can use the web browser interface to configure the device, play back recorded video, search through event logs, and control a PTZ dome camera. You can also specify settings on the web browser interface to optimize video playback and recording performance when operating in a low or limited bandwidth environment.

## Windows Vista and 7 users

Internet Explorer for Windows Vista and Windows 7 operating systems have increased security measures to protect your PC from any malicious software being installed. When using the TVR 41 web browser interface, you can install ActiveX controls to connect and view video using Internet Explorer.

To have complete functionality of the web browser interface and the DVR player with Windows Vista and Windows 7, do the following:

- Run the Browser interface and the DVR player application as an administrator in your workstation
- Add the DVR's IP address to your browser's list of trusted sites

**To add the DVR's IP address to Internet Explorer's list of trusted sites:**

1. Open Internet Explorer.
2. Click **Tools**, and then **Internet Options**.
3. Click the Security tab, and then select the Trusted Sites icon.
4. Click **Sites**.
5. Clear the "Require server verification (https:) for all sites in this zone" box.
6. Enter the IP address or DDNS name in the "Add this website to the zone" field.
7. Click **Add**, and then click **Close**.
8. Click **OK** in the Internet Options dialog screen.
9. Connect to the TVR 41 for full browser functionality.

# Accessing the web browser

To access the TVR 41, open a web browser and enter the IP address assigned to the TVR 41, as a web address. On the logon screen, enter the default user ID and password.

**Note:** Only one DVR can be viewed per browser.

User ID: admin

Password: 1234

The default values for TVR 41 network settings are:

- IP address - 192.168.1.82
- Subnet mask - 255.255.255.0
- Gateway address - 192.168.1.1
- Server Port: 8000
- HTTP Port: 80

# Web browser overview

The TVR 41 web browser lets you view, record, and play back videos as well as manage all aspects of the DVR from any PC with Internet access. The browser's easy-to-use controls give you quick access to all TVR 41 functions. See Figure 26 below.

**Figure 26: Live view in the web browser interface**

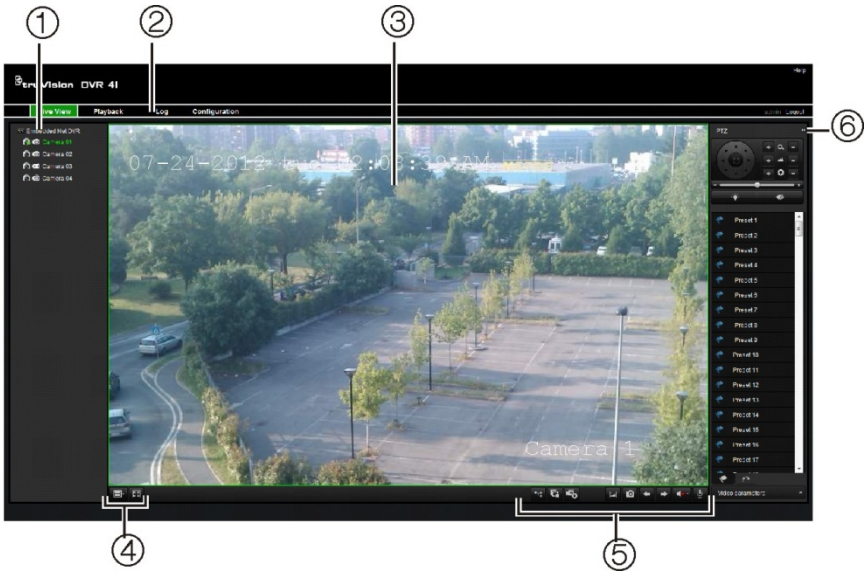



**Table 13: Description of live view in the web browser**

| Item | Name | Description |
|---|---|---|
| 1. | Camera | View video and record video from the selected camera. |
| 2. | Menu toolbar | Lets you do the following:<br>• View live video<br>• Play back video<br>• Search for event logs<br>• Configure settings<br>• Log out of the interface |
| 3. | Viewer | View live or playback video. |
| 4. | Display format | Define how you want video to be displayed in the viewer: Multiview or full screen. |
| 5. | Video function toolbar | Lets you do the following in live view:<br> Switch between mainstream and substream.<br> Start/stop all streaming from selected cameras.<br> Start recording from selected cameras.<br> Turn POS/ATM text insertion on/off.<br> Take a video snapshot.<br> View previous and next camera respectively.<br> If viewing in multiview format, live view moves to the next group of cameras for the selected number of video tiles.<br> Turn audio on/off |

| Item | Name | Description |
|---|---|---|
| | | Turn microphone on/off |
| 6. | PTZ panel | Hide/display the PTZ panel. |

# Using the web browser to configure the device

Click **Config** on the menu bar to display the configuration screen. There are two ways to configure the DVR: Local and Remote.

## Local configuration

Local configuration lets you define communication and network parameters such as protocol type, maximum file size, stream type and network transmission settings. You can also specify the directory locations for saving recorded and playback video, captured images, and downloaded files.

## Remote configuration

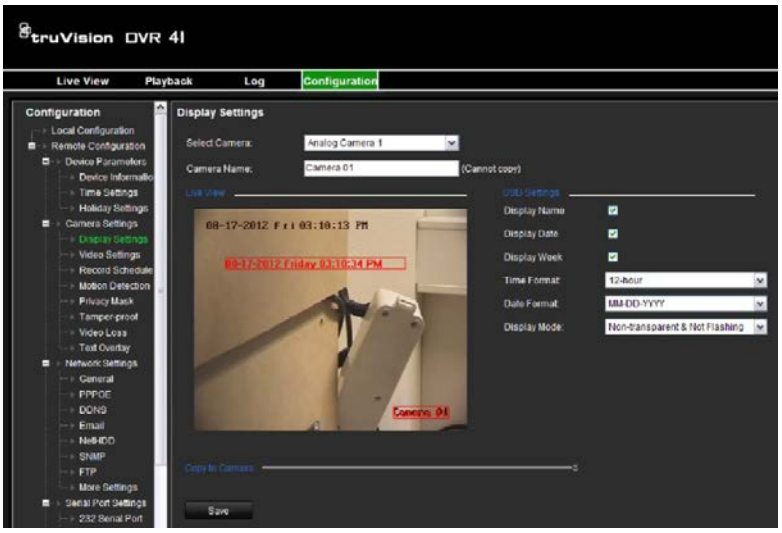
Remote configuration lets you remotely configure the following DVR settings:

- DVR information including device name, number, and overwrite option as well as time and holiday settings.
- Camera settings including motion detection, privacy masking, video loss, video tampering, video image display settings, and text overlay
- Recording settings including recording schedule and recording quality
- Network settings including, e-mail, DDNS, and NTP setup
- Serial port settings including RS-485 and RS-232 parameters
- Alarm settings including alert notifications, audio alerts, pre-alarm, and post-alarm seconds, and notification parameters
- System settings including, user management, date and time, audio, RS-485, RS-232, language, alarm notification, and hard drive setup

See Figure 27 below. Please refer to the specific chapters on this manual for detailed information on configuring the different functions.

**Note:** The configuration settings defined remotely are different from those that can be defined locally.

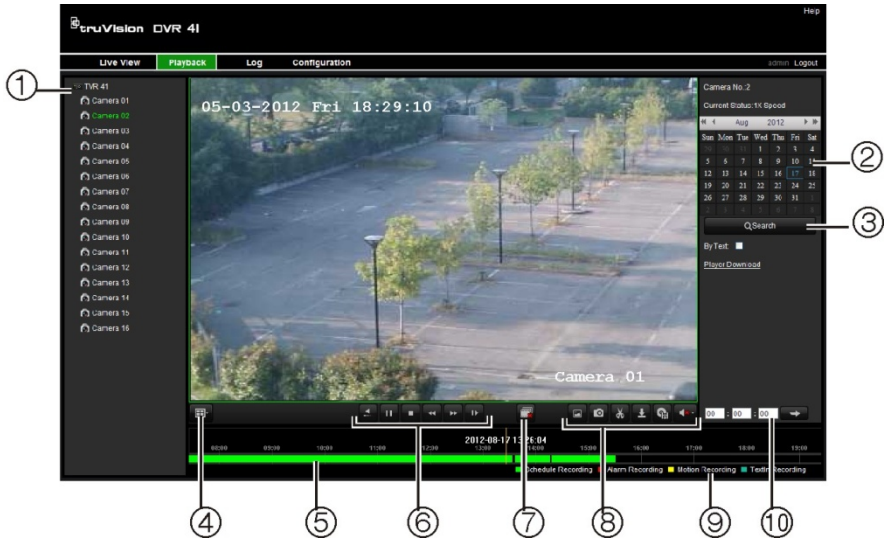
**Figure 27: Remote browser configuration screen (Display Settings window shown)**




# Searching and playing back recorded video

To search and play back recorded video, click Playback on the menu bar to display the Playback page shown in Figure 28 below.

**Figure 28: Browser playback page**




| Item | Description |
|---|---|
| 1. | Selected camera. |
| 2. | **Calendar**: Selected day is highlighted. |
| 3. | **Search**: Click to start searching recorded files for the selected camera. |
| 4. | **Display format**: Click to change the display format: full screen or multiview display. |
| 5. | **Timeline**: The timeline moves left (oldest video) to right (newest video). Click a location on the timeline to move the cursor to where you want playback to start. |

| Item | Description | |
|---|---|---|
| 6. | **Playback control toolbar**: | |
| | | **Reverse**: Click to reverse playback. |
| | | **Start/stop**: Start or stop playback. |
| | | **Stop playback**. Timeline jumps back to 00:00:00 time (midnight) of the previous day. |
| | | **Playback slow forward**: Click to scroll through the different speeds available: single frame, 1/8 speed, ¼ speed, ½ speed, normal, X2 speed, X4 speed, X8 speed, maximum speed. Current speed is displayed under the camera name on top right of window. |
| | | **Playback fast forward**: Click to scroll through the different speeds available: single frame, 1/8 speed, ¼ speed, ½ speed, normal, X2 speed, X4 speed, X8 speed, maximum speed. Current speed is displayed under the camera name on top right of window. |
| | | **Single frame**: Click to play back one frame at a time. |
| 7. | | **Stop streaming**: Stop streaming from all cameras. |
| 8. | **Audio and video control toolbar**: | |
| | | **Text insertion**: Click to enable/disable POS/ATM text display in playback. |
| | | **Snapshot**: Capture a snapshot of the video. |
| | | **Video clips**: Start/stop video clip during playback. Sections of a recording can be saved to an external storage device. |
| | | **Download**: Download video clips. |
| | | **Backup**: Click to make back up of recorded files to save locally on the DVR. A list of the recorded files appears |
| | | **Audio**: Click to enable/disable audio. |
| 9. | **Type of recording**:<br>**Green**: Indicates video recorded based on the recording schedule defined.<br>**Red**: Indicates video recorded triggered by an alarm event.<br>**Yellow**: Indicates video recorded triggered by motion detection.<br>**Blue**: Indicates video recorded triggered by a POS/ATM text recording. | |
| 10. | **Jump start**: Enter a precise time in the box and click the Go To button to jump start the playback at this selected time. | |

Select a camera and a day to search from on the calendar displayed, and then click Search. The timeline below the page indicates video recorded for the specified day. The timeline also classifies by color the type of recording with each type.

Click and drag the marker across the timeline on where you want video playback to begin, and then click Play on the playback control toolbar. You can capture a snapshot of a video image, save the video playback, or download the recorded video.

# Searching for event logs

The DVR compiles a log of events, such as the start or end of video recording, DVR notifications, and alarms, through which you can easily search. Logs are categorized by the following types:

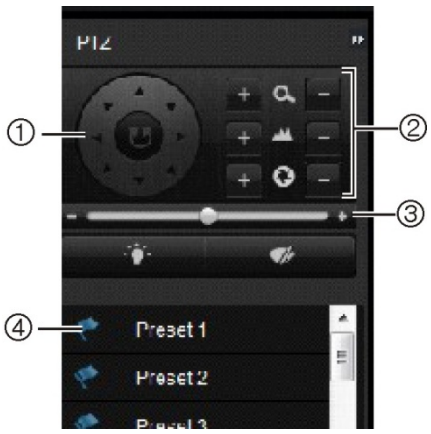
- **Alarm:** Includes motion detection, tamper detection, video tampering, and other alarm events
- **Notifications:** Includes system notifications such as video loss, HDD failures, and other system-related events
- **Operations:** Includes users access to the web interfaces and other operational events
- **Information:** Includes general information on the DVR actions, such as the start and end of video recording, etc.

To search for logs, click Log on the menu bar, select a log type, specify a date and time range, and then click Search.

# Controlling a PTZ dome camera in the web browser

The web browser interface lets you control the PTZ functions of a dome camera. Click a PTZ dome camera and use the PTZ controls on the interface to control the PTZ functions.

**Figure 29: PTZ controls**




1. Directional pad/auto-scan buttons: Controls the movements and directions of the PTZ. Center button is used to start auto-pan by the PTZ dome camera.
2. Adjust zoom, focus, and iris.
3. Adjust speed of PTZ dome camera.
4. Start selected preset.

# Chapter 10
# Recording

This chapter provides instructions on how to define the recording settings of your DVR. This chapter covers how you can configure your initial recording settings, schedule recordings, protect your recorded files, and set up your HDD for redundancy.

## Initializing recording settings

Before you can set up your DVR to begin recording, you must first configure general recording settings for the analog cameras.

Ensure that the HDD has been installed and initialized before configuring the recording settings. See Chapter 13 “HDD management” on page 97 for more information.

**To configure recording settings:**

1. Click the **Video Schedule** icon in the menu toolbar.
2. Select **Encoding** > **Record**.

3. Select the camera you want to configure.

4. Configure the following recording settings:
   - **Encoding parameters:** Select one of the stream types: Mainstream (TL-Hi, Mainstream (TL-Lo), Mainstream (Event), Mainstream (Alarm), or Substream.
   - **Stream type:** Select the type of stream to record, either video or video and audio.
   - **Resolution:** Select the resolution of the recording. Options include: 4CIF, 2CIF, CIF, and QCIF.
   - **Bit rate type:** Select Constant or Variable.
   - **Video quality:** Select the quality at which to record. If “Variable” was selected as the bit rate type, this option is unavailable.
   - **Frame rate:** Select the recording frame rate. 25 PAL (30 NTSC), 20, 18, 16, 15, 12, 10, 8, 6 (default), 4, 2, 1, 1/2, 1/4, 1/8, 1/16. Default is 25 (30).
   - **Max bit rate mode:** Select the general default or customized option.
   - **Max bit rate (kbps):** If the customized maximum bit rate mode was selected, enter the value here. It must be between 32 and 8192 kbps. It is calculated from the frame rate and time required.
   - **Pre-record:** This is the time the camera starts recording before the scheduled time or event. Select the time in seconds to start pre-recording before the scheduled time or event.

     The maximum pre-recording times available depend on the constant bit rate. See “Maximum pre-recording times” on page 137 for more information.
   - **Post-record:** This is the time the camera continues to record after the scheduled time or event. Select the time in seconds to stop post-recording after the scheduled time or event.
   - **Auto-delete (day):** Select the number of days after which recorded video from the specified camera is permanently deleted from the HDD. A “day” is defined as the 24-hour period from when the auto delete mode (ADM) was set.

     The maximum number of days that can be set is 60. However, the actual number of days permitted depends on the HDD capacity. If the value is set to ‘0’, the option is disabled.
   - **Record audio:** Select **Yes** to record sound with the images.
5. Click **Apply** to save the settings.
6. If you want to save these parameters to another camera, click **Copy** and select the camera in the pop-up screen that appears. Click **OK** and return to the main screen.
7. Click the **Capture** tab and configure the settings for captured video, such as snapshots. Click **Apply** to save the settings.

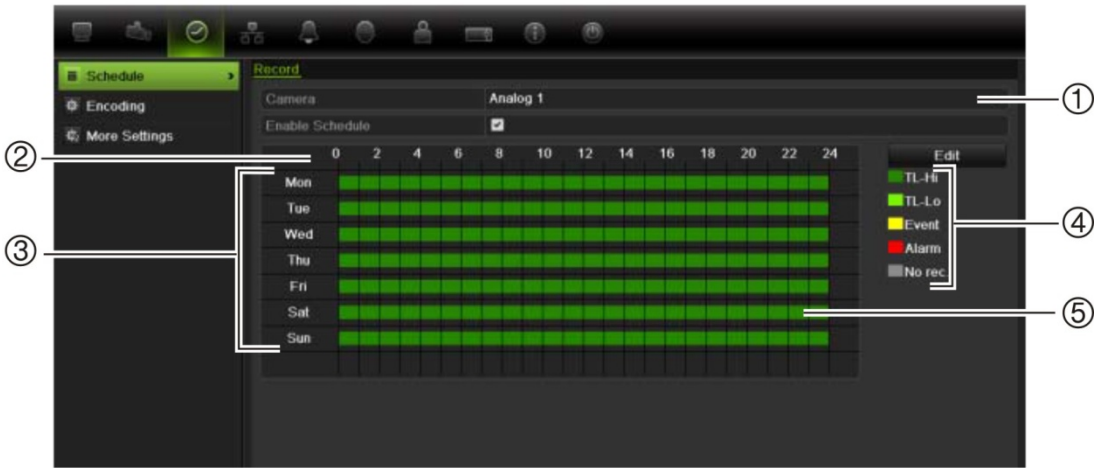
8. Click **Back** to return to live view.

# Defining a recording schedule

Defining a recording schedule lets you specify when the DVR records video and under what circumstances. Each camera can be configured to have its own recording schedule.

The schedules are visually presented on a map for easy reference. See Figure 30 below for an example.

**Figure 30: Description of the Schedule screen**




1. **Camera**. Select a camera.
2. **Schedule time**. Represents the 24-hour cycle during which a schedule is selected.
3. **Schedule day**. There are seven days to select: Sunday (Sun), Monday (Mon), Tuesday (Tue), Wednesday (Wed), Thursday, (Thu), Friday (Fri), and Saturday (Sat).
4. **Recording type**. There are five recording types to select, which are color-coded:
   - TL Time lapse (Green squares): Record of a specific day. Each green square in the timeline represents an hour in the 24-hour period.
   - TL-Hi (Dark green): High quality time lapse. Records high quality video.
   - TL-Lo (Bright green): Low quality time lapse. Records low quality video. This could be used, for example, for night recordings when few events or alarms are expected. Saving the video in low quality helps save resources on the HDD.
   - Event (Yellow): Records only events, such as motion detection and POS/ATM text insertion.
   - Alarm (Red): Records only alarms.
   - None (Grey): No recording during this period.
5. **Timeline (TL)**. There is a 24-hour time line for each day. Up to eight recording periods can be scheduled during the 24-hour period.

# Daily schedules

**To set up a daily recording schedule:**

1. Click the **Video Schedule** icon in the menu toolbar and select S**chedule**.
2. Select a camera.
3. Check the **Enable Schedule** box.
4. Click **Edit**. The following screen is displayed:

5. Select the day of the week for which you want to set up the schedule.

   You can define a schedule for each day of the week.

6. Set the start and end time for recording.

   Define a time period by entering a start (left column) and end (right column) time. You can schedule up to eight time periods. Click All Day to record all day.

   **Note:** Time periods defined cannot overlap.

7. Select a recording type.

   This setting instructs the DVR to begin recording when an alarm is triggered. The recording type can be based on time and triggered by motion detection and/or an alarm. If set to TimeLapse (TL-Hi or TL-Lo), the DVR records continuously.

8. Click **Apply** to save settings
9. Repeat steps 3 to 8 for other days of the week or to copy the schedule settings to another day.

   To copy the current schedule settings to another day of the week, click **Copy**. Select the number of the day of the week to which to copy the schedule and click **OK** to save changes and return to the Edit screen.

10. Repeat steps 3 to 9 for other cameras.
11. Click **Apply** to save the settings and then **OK** to return to the schedule screen.

# Holiday schedules

As well as being able to schedule when recordings occur during the week, you can also schedule them for specific holidays in the year such as the first of January, or the second Wednesday of every month. You can schedule up to 32 holiday periods.

A holiday period can be scheduled for a particular day or as a block of days.

**To set up a holiday recording schedule:**

1. Click the **Display Mode Settings** icon in the menu toolbar and select **Holidays**.
2. Select a holiday period from the list and click **Edit** to modify the settings. The Edit screen appears.

3. Enter the name of the holiday period and click **Enable**.
4. Select whether the holiday period will be categorized by date, week or month and then enter the start and end dates.
5. Click **Apply** to save the settings and then **OK** to return to the Edit screen.
6. Repeat steps 2 to 5 for other holiday periods.
7. Click **Back** to return to live view.

# Motion detection schedules

For analog cameras you can set up both the schedule and areas sensitive to motion detection for each camera individually or easily copy the settings of one camera to other cameras.

For IP cameras you can configure from the DVR the schedule when the camera can be triggered by motion. However, you need to configure the area of the video display sensitive to motion from the camera itself.

For information on scheduling motion detections, see “Motion detection set up” on page 82.

# External alarm schedules

The DVR can be scheduled to record when an alarm is triggered by an external alarm device such as a PIR detector or dry contacts. For information on scheduling external alarms, see “Triggering or clearing alarm outputs manually” on page 86.

# Protecting recorded files

There are two methods to prevent recorded files from being inadvertently overwritten or deleted off the HDD. We highly recommend that important recorded events be protected from deletion. Recorded files can either be *locked* or the HDD that the files reside on can be set to *read only*.

## Locking and unlocking recorded files

Lock files to protect them against being overwritten or deleted.

**To lock or unlock a recorded file:**

1. In live view enter the video search screen by pressing the **Search** button on the front panel or remote control, and then enter Advanced Search.

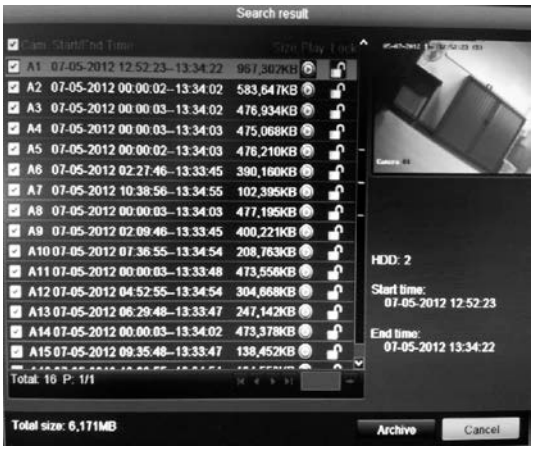
   — Or —

   In live view right-click the mouse to display the pop-up menu and select **Advanced Search**.

   The Search screen appears.

2. Search for the desired recording by entering the search parameters, which include the camera number, record type, file type, and start time and end time.
3. Click **Search**.

   A list of recordings, similar to the figure below, matching the search parameters is displayed.




4. Select the file you want to lock/unlock.
5. Click to lock a file. Click again to unlock.

   The Locked column indicates whether a file is locked or not. Closed lock icons indicate locked files while opened lock icons indicate unlocked files. The Lock button toggles between Lock and Unlock, depending on the file.
6. Click **Cancel** to return to live view.

## Setting the HDD to read-only

When you set an HDD to *read-only*, recorded video files cannot be written to the HDD. If multiple HDDs are used, the DVR automatically records to the next HDD not set to *read-only*

**To set a HDD to read-only:**

1. Click the **System Setting** icon in the menu toolbar.
2. Click **Hard Disk** to set up the HDD parameters.
3. Select the HDD you want to set to read-only.
4. Check **Read only**.
5. Click **Apply** to save the settings. The HDD is now read-only.

   **Note:** In order to enable recordings on that particular HDD again, you must set the HDD status back to R/W (Read/ Write).

# Configuring redundant recording

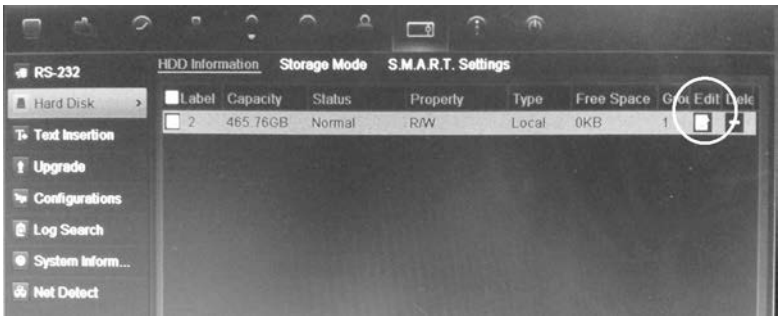
Setting up HDD redundancy lets your DVR redundantly record a copy of the videos onto multiple drives as a safeguard against losing all your files in case of disk failures. This process is also known as *mirroring*. You must have more than one HDD in your DVR to set up HDD redundancy.

Redundancy significantly reduces the storage capability of the HDDs. As a result you need to double your capacity to record video over a given time.

**Note**: You must set the storage mode of the HDD to Group before configuring the redundancy. See “Setting HDD groups” on page 98 for more information.

**To set up HDD redundancy:**

1. Click the **System Setting** icon in the menu toolbar and select **Hard Disk**.
2. Click the **HDD Information** tab and select the HDD to be used for redundancy and click **Edit**.




3. In the Local HDD Settings window, select **Redundancy**.

   Verify at least one other HDD is set to R/W (read/write).
4. Click **Apply** to save the settings and then **OK** return to the previous screen.
5. In the menu toolbar, click the **Video Schedule** > **Encoding**.
6. Select the camera to be used for redundancy.
7. Check **Redundant Record/Capture**.
8. Click **Apply** to save the settings.
9. Repeat steps 7 to 9 for other cameras whose files you would like to be redundantly recorded.
10. Click **Back** to return to live view.

    **Note**: The HDD set to redundancy stores an extra copy of the recording. When an HDD is set to redundancy, at least one other HDD must be set to the R/W status.

# Chapter 11
# Alarm settings

This chapter describes setting up how the system will respond when an alarm is triggered.

## Description of alarm notification types

When setting up the rules for alarm detection, you can specify how you want the DVR to notify you about an alarm. You can select more than one notification type. Not all notifications types are available for all types of alarms.

The alarm notification types are:

- **Audible warning:** Triggers an audible *beep* when a notification or alarm is detected.
- **Notify surveillance center:** Sends a signal to TruVision Navigator or other software applications when an alarm or notification is detected.
- **Trigger alarm output:** Triggers an alarm output when a notification is detected for an external alarm. See “Setting up external alarms” on page 84 for information on configuring an alarm output.
- **Send e-mail:** Sends an e-mail when an alarm or notification is detected. See “Configuring e-mail” on page 92 for information on how to configure the DVR to send an e-mail.
- **Full screen monitoring:** When an alarm is triggered, the local spot monitor (VGA or BNC monitor) displays an image in live view mode. For alarms that are triggered simultaneously, images display one at a time every 10 seconds (default dwell time). You can set a different dwell time using the Dwell Time setting under the Display Settings>Layout screen. When the alarm stops, cycling of the images stops and you return to live view mode. This alarm option must be selected for each channel where it is required..

  This alarm notification is not available for system alarms.
- **Front panel LED alarm**: Triggers the alarm indicator bar on the front panel to flash on and off when a motion detection alarm is detected.

# Setting up motion detection

Motion detection is one of the most important features of a DVR. With it there is no need to manually search through hours of video recordings to find an event. The TVR 41 can be set up to trigger an alarm if it detects motion and to record it. You can then search these recorded motion activities for specific incidents. If enabled, motion detection recording can help increase the number of days your DVR can record.

You can mask out any areas of motion on an analog camera display that you do not want to trigger a recording such as a flag on a pole or a moving tree.

Select the level of sensitivity to motion as well the target size so that only objects that could be of interest can trigger a motion recording.  For example, recording is triggered by the movement of a person but not that of a cat.

For analog cameras you can set up both the schedule and areas sensitive to motion detection for each camera individually or easily copy the settings of one camera to other cameras.

For IP cameras you can set up the schedule from the DVR when the camera can be triggered by motion. However, you need to configure the area of the video display sensitive to motion from the IP camera itself.

## Motion detection set up

**To set up motion detection:**

1. Click the **Camera Management** icon in the menu toolbar and select **Motion**.

2. Select the analog camera to detect motion. Each camera must be set up individually.
3. Check **Enable Motion Detection**.

   **Note:** This option is only available for analog cameras. The button is inactive for IP cameras.
4. Select the areas sensitive to motion.

   Click and drag the mouse cursor across the screen. The area selected appears as a red grid. Areas covered by the red grid are sensitive to motion detection.

   Click **Full screen** to activate the whole screen or **Clear** to clear the screen.

5. Set the sensitivity level.

   Drag the Sensitivity scroll bar to the desired sensitivity level. The highest value is on the right of the bar.

6. Specify the target size.

   In the Target size option, specify how many grid squares must be activated before motion is detected. Enter a value between 0 and 255 squares.

7. Select the cameras that will record the motion detected.

   Click **Rule**. The Rule screen appears. Click the **Trigger Channel** tab and select the cameras that will record when a motion alarm is triggered. Click **Apply** to save the settings.

8. Select the recording schedules for motion detection.

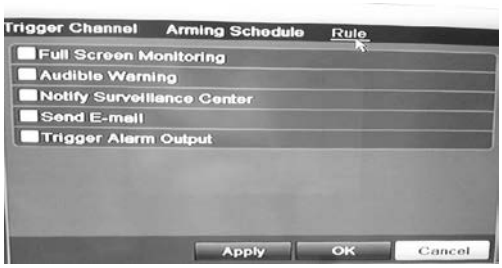
   Click the **Arming schedule** tab and select the day of the week and the time periods during the day when motion can be recorded. You can schedule up to eight time periods in a day. Default is 24 hours.

   Click **Apply** to save the settings. Click **Copy** to copy the settings to other days of the week.

   **Note:** Time periods defined cannot overlap.

9. Select the response method to motion detection.

   Click the Rule tab to define the method by which you want the DVR to notify you of the alarm. Click **Apply** to save settings.




10. Click **OK** to return to the motion detection settings screen.
11. Click **Back** to return to live view.

**To trigger the front panel alarm LED:**

1. Click the **Display Settings** icon in the menu toolbar and select **Monitor>More Settings**.
2. Check both the **Other Notification: Panel Alarm LED** and **Motion Alarm** boxes.

# Setting up external alarms

The DVR can be configured to record when an alarm is triggered by an external alarm device (for example, PIR detector, dry contacts…).

**To set up external alarms:**

1. Click the **Alarm settings** icon in the menu toolbar and select **Alarm Input**.

2. Select the alarm input number of a camera and enter the name of the input, if required.
3. Select the alarm input type, NO or NC.
4. Check the Setting box to enable the function and click **Rule** to set up the rules for the cameras to be triggered, their alarm schedules, method of alarm notification and PTZ function.
5. Select the cameras to be triggered when an external alarm is detected.

   In the Rule window, click **Trigger channel** and select the cameras to be triggered for recording when an alarm is detected. Only analog cameras can be selected. Click **Apply** to save the settings.
6. Select the recording schedules for the external alarm.

   Click the **Arming schedule** tab and select the day of the week and the time periods during the day when motion can be recorded. You can schedule up to eight time periods in a day. Default is 24 hours.

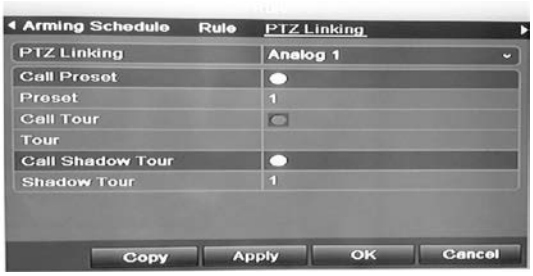
   Click **Apply** to save the settings. Click **Copy** to copy the settings to other days of the week and holiday period.

   **Note:** The time periods defined cannot overlap.
7. Select the response method to an external alarm.

Click the Rule tab to define the method by which you want the DVR to notify you of the alarm. Click **Apply** to save settings.

8. Select the PTZ camera function required in response to an external alarm.

   Select the PTZ camera and the preset, preset tour or shadow tour that is triggered when the alarm is detected.




   Click **Apply** to save the settings. Click **Copy** to copy the settings to other cameras, if required.

9. Click **OK** to return to the alarm input screen.
10. Click **Back** to return to live view.

**To set up an alarm output:**

**Note:** Not all IP cameras can be triggered by an alarm output.

1. Click the **Alarm Settings** icon in the menu toolbar and select **Alarm Output**.
2. Select the alarm output.
3. Select a timeout option.

   The timeout setting lets you define how long a signal remains active after the alarm has ended. If you select **Manually Clear**, the signal remains active until it is manually acknowledged by pressing the alarm button on the front panel or remote control (see “Triggering or clearing alarm outputs manually” on page 86).

4. Select the recording schedules for the alarm output.

   Click **Rule** and select the day of the week and the time periods during the day when motion can be recorded. You can schedule up to eight time periods in a day. Default is 24 hours.

   Click **Apply** to save the settings. Click **Copy** to copy the settings to other days of the week and holiday period.

   **Note:** The time periods defined cannot overlap.

5. Click **OK** to return to the alarm output screen.
6. Click **Back** to return to live view.

# Triggering or clearing alarm outputs manually

When an alarm is activated, the DVR can be set up so that the alarm must be manually acknowledged in order to be silenced. See “Setting up external alarms” on page 84 for information on setting up an alarm to be manually cleared.

All user levels (administrator, manager and operator) can manually acknowledge an alarm.

**To trigger or clear alarm outputs manually:**

1. Click the **Alarm settings** icon in the menu toolbar and select **Alarm Output**.
2. Click the **Manual Alarm** tab.
3. Select the desired alarm output and click one of the following buttons:
   - **Clear:** Clear to stop alarm output.
   - **Trigger All:** Trigger all alarm outputs at once. This action could be done, for example, when you need to test them.
   - **Clear All:** Stop all alarm outputs at once.
4. Click **Back** to return to live view. The alarm is silenced.

- Or -

1. Press the **Alarm** button on the front panel or remote control. The alarm is silenced.

# Setting up system notifications

Setting up system notifications instructs the DVR to alert you when irregular events occur and how to alert you to the event.

You can quickly check the system status by looking at the status LEDs on the front panel. When there is an irregular event with the system, an icon appears on screen to also alert you. See “Status information” on page 29 for further information.

The system notifications include:

- **HDD Full:** All installed HDDs are full.
- **HDD Error:** Errors occurred while files were being written to the HDD, no HDD installed or HDD had failed to initialize.
- **Network Disconnected:** Disconnected network cable.
- **IP Conflicted:** Conflict in IP address setting.
- **Illegal Login:** Wrong user ID or password used.
- **Abnormal Video Signal:** Unstable video signal or video loss detected.

- **Input/output Video Standards Mismatch:** I/O video standards do not match.
- **Abnormal Record:** No space on HDD to save recorded files.

See “Description of alarm notification types” on page 81 for information on the different alarm notification types available.

**To set up system notifications:**

1. Click the **Alarm settings** icon in the menu toolbar and select **Notification**.
2. Select a notification type. See “Description of alarm notification types” on page 81 for more information.
3. Check one or more response options: Audible warning, notify surveillance center, send e-mail, trigger alarm output.
4. Click **Apply** to save the settings.

# Detecting video loss

Video may be lost if the video cable or camera develop a fault or are damaged. You can set up the DVR to detect video loss and trigger a system notification.

**To setup video loss detection:**

1. Click the **Camera management** icon in the menu toolbar and select **Video Loss**.
2. Select a camera to configure for video loss detection.
3. Check the **Enable Video Loss Alarm** box to enable the feature.
4. Click **Rules** next to the Video Loss Detection box to enter the Rules screen.
5. Click the **Rule** tab and select how you want the DVR to notify you of video loss. Click **Apply** to save the settings and then clock **OK** to return to the previous screen.
6. Click the **Arming Schedule** tab and select the schedule of when you want video loss detection to be enabled. Schedule can be set for all week or any day of the week with up to 8 time periods per day.
7. Click the **Apply** button to save settings.
8. Click **Copy** to copy these settings to other cameras.
9. Click **Back** to return to live view.

# Detecting video tampering

Video tampering, such as moving a camera to a different position, can also be detected and set to trigger an action on the DVR.

Both analog and IP cameras can be selected. However, not all IP cameras may support this feature.

**Note:** It is strongly recommended not to configure for video tampering when using PTZ dome cameras.

**To set up video tampering detection:**

1. Click the **Camera management** icon in the menu toolbar and select **Tamper-Proof** to display the tamper-proof settings screen.
2. Select a camera to configure for video loss detection.
3. Check the **Enable Tamper-proof** box to enable the feature.
4. Define a tampering area.

   The tamper detection area setup interface lets you define an area on screen where you want camera tampering to be detected. Click and drag the mouse across an area to mark that area for video tampering. You can only set one tampering area with the full screen being the maximum area. Click **Clear** to clear the screen.
5. Select the tamper detection sensitivity level by clicking the sensitivity scroll bar.  Higher sensitivity is to the right of the bar.
6. Select the recording schedules for the tamper.

   Click **Rule** and then select the **Arming schedule** tab to select the day of the week and the time periods during the day when motion can be recorded. You can schedule up to eight time periods in a day. Default is 24 hours.

   Click **Apply** to save the settings. Click **Copy** to copy the settings to other days of the week and holiday period.

   **Note:** The time periods defined cannot overlap.
7. Select the response method to an external alarm.

   Click **Rule** and then select the **Rule** tab to select the method by which you want the DVR to notify you of the alarm. Click **Apply** to save settings and then **OK** to return to the previous screen.
8. Click **Back** to return to live view.

# Chapter 12
# Network settings

You must configure your DVR's network settings before using it over the network.

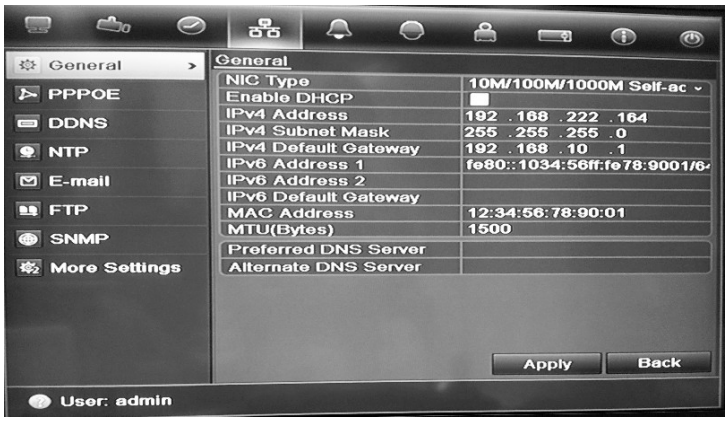
The DVR must have access to the internet when configuring the network settings.

**Note:** As every network configuration may differ, please contact your Network Administrator or ISP to see if your DVR requires specific IP addresses or port numbers.

## Configuring general network settings

**To configure general network settings:**

1. Click the **Network settings** icon in the menu toolbar to display its screen.




2. Click **General** and enter the required settings:

| Option | Description |
|---|---|
| NIC type | Network interface card (NIC) is a device used to connect the DVR to a network. Select the NIC type used from the drop-down list.<br>Default value is 10/100/1000M self-adaptive. |

| | |
|---|---|
| Enable DHCP | Check this box if you have a DHCP server running and want your DVR to automatically obtain an IP address and other network settings from that server.<br>Default value is Enable. |
| IPv4 address | Enter the IP address for the DVR.<br>Default value is 192.168.1.82. |
| IPv4 subnet mask | Enter the subnet mask for your network so the DVR will be recognized within the network.<br>Default value is 255.255.255.0 |
| IPv4 default gateway | Enter the IP address of your network gateway so the DVR will be recognized within the network. This is typically the IP address of your router.<br>Default value is 192.168.1.1 |
| IPv6 address 1 | Enter the IPv6 address for the DVR.<br>Default value is fe80::240:3dff:fe7e:926f/64. |
| IPv6 address 2 | Enter the IPv6 address for the DVR. |
| IPv6 default gateway | Enter the IPv6 address of your network gateway so the DVR will be recognized within the network. This is typically the IP address of your router. |
| MAC address | Enter the MC address. |
| MTU (bytes) | Enter a value between 500 and 9676. Default is 1500. |
| Preferred DNS server | Enter the preferred domain name server to use with the DVR. |
| Alternate DNS server | Enter the alternate domain name server to use with the DVR. |

3. Click **Apply** to save the settings.

# Configuring PPPoE

You can connect the DVR directly to a DSL modem. To do this, you need to select the PPPoE option in the network settings. Contact your ISP to get the user name and password.

**To configure general network settings:**

1. Click the **Network settings** icon in the menu toolbar to display its screen.
2. Click **PPPoE** and check the enable PPPoE box.
3. Enter your user name and password and confirm the password.
4. Click **Apply** to save the settings.

# Configuring DDNS

If your DVR is set up to use PPPoE as its default network connection, you can set up Dynamic DNS (DDNS) to be used in conjunction. You need to register with your ISP before configuring your system for use with DDNS.

**To set up DDNS:**

1. Click the **Network settings** icon in the menu toolbar.
2. Click **DDNS** to display its screen.
3. Check the **DDNS** box to enable feature.
4. Select one of the DDNS types listed:
   - **ezDDNS**: Click the **Get URL** button. The URL address to access the unit is then displayed. If no host name is specified, the DDNS will allocate one automatically. Check the NAT box to enable this option and enter the NAT server port and NAT HTTP port values.

   - **DynDNS**: Enter the server address for DynDNS (i.e. members.dyndns.org). In the DVR domain name field, enter the domain obtained from the DynDNS web site. Then enter the user name and password registered in the DynDNS network.
5. Click **Apply** to save the settings.

# Configuring an NTP server

A Network Time Protocol (NTP) server can also be configured on your DVR to keep the date and time current and accurate.

**Note**: If the device is connected to a public network, you should use a NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44) or europe.ntp.pool.org. If the device is setup in a more customized network, NTP software can be used to establish a NTP server used for time synchronization

**To set up an NTP server:**

1. Click the **Network settings** icon in the menu toolbar.
2. Click **NTP** to display its screen.
3. Check the NTP box to enable feature. It is enabled by default.
4. Enter the NTP settings:
   - **Interval:** Time in minutes to synchronize with the NTP server. The value can be between 1 and 10080 minutes. Default is 60 minutes.
   - **NTP server:** IP address of the NTP server.
   - **NTP port:** Port of the NTP server.
5. Click **Apply** to save the settings.

# Configuring e-mail

Your DVR can send e-mail notifications of alarms or notifications through the network.

**Note:** Ensure that the DNS address has been set up correctly beforehand.

**To configure e-mail settings:**

1. Click the **Network Settings** icon in the menu toolbar.
2. Click **E-mail** and enter the required settings.

| Option | Description |
|---|---|
| Enable server authentication | Check the box if your mail server requires authentication and enter the login user name and password. |
| SMTP server | Enter the SMTP server's IP address. |
| SMTP port | Enter the SMTP port. The default TCP/IP port for SMTP is 25. |
| Enable SSL | Check the box to enable SSL if it is required by the SMTP server. This feature is optional. |
| Sender | Enter the name of the sender of the e-mail. |
| Sender's address | Enter the sender's e-mail address. |
| Select receivers | Select an e-mail recipient. Up to three receivers can be selected. |
| Receiver | Enter the name of the receiver of the e-mail. |
| Receiver's address | Enter the e-mail address of the receiver. |
| Enable attached snapshot | Check the Attach JPEG File box if you want to send an e-mail with attached alarm images. |
| Interval | Select an interval range in the Interval box.<br>The interval range represents the time range in between the alarm images being sent. For example, if you set the interval range at two seconds, the second alarm image will be sent two seconds after the first alarm image |

3. Click **Test** to the test e-mail settings.

   **Note:** We recommend that you test the e-mail settings after entering values in the e-mail window.

4. Click **Apply** to save the settings.

**Note:** We recommend that you test the e-mail settings after entering values in the E-mail screen.

# Configuring SNMP

The SNMP is a protocol used to manage local networks. You can define the SNMP traps that allow information on the DVR status as well as event and alarm notifications to be sent to a surveillance center.

Before configuring this function, you must first install the SNMP software

**To configure SNMP protocol settings:**

1. Click the **Network settings** icon in the menu toolbar.
2. Click **SNMP** and enter the required settings.

# Configuring the FTP server

This function is currently unavailable.

# Configuring a remote alarm host

If a remote alarm host set, the DVR sends a signal to the host when an alarm is triggered. The remote alarm host must have the TruVision Navigator server software installed.

**To set up a remote alarm host:**

1. Click the **Network Settings** icon in the menu toolbar.
2. Click **More Settings**.
3. Enter Alarm Host IP and Alarm Host Port.

   Alarm host IP represents the IP of the remote PC where the Network Video Surveillance software installed. The alarm host port value must be the same as software's alarm monitor port. Default port is 7200.

# Configuring multicast

Setting up multicasting resolves limitation issues when streaming videos through a network access device. A multicast address spans the Class-D IP range of 224.0.0.0 to 239.255.255.255. We recommend that the IP address range of 239.252.0.0 to 239.255.255.255 be used.

**To set up multicasting:**

1. Click **Network Settings** icon in the menu toolbar and then click **More Settings**.
2. Enter a Multicast IP address.

   **Note:** When adding a device to the Network Video Surveillance software, the multicast address must be the same as the DVR's multicast IP.
3. Click **Apply** to save the settings.

# Configuring the server and HTTP ports

You can change the server and HTTP ports from the default settings in the Network Settings screen. The default server port is 8000 while that of the default HTTP port is 80.

**Note:** The server port has a port range of 2000 to 65535 and is used for remote client software access. The HTTP port is used for remote internet browser access.

**To change the default ports:**

1. Click the **Network Settings** icon in the menu toolbar and then click **More Settings**.
2. Enter the new Com Port and HTTP Port values.

# Configuring the RTSP service port

The RTSP (Real Time Streaming Protocol) is a network control protocol designed for use in entertainment and communications systems to control streaming media servers.

**To configure RTSP service port:**

1. Click the **Network Settings** icon in the menu toolbar and then click **More Settings**.
2. Enter the RSTP ort value. The default value 554.

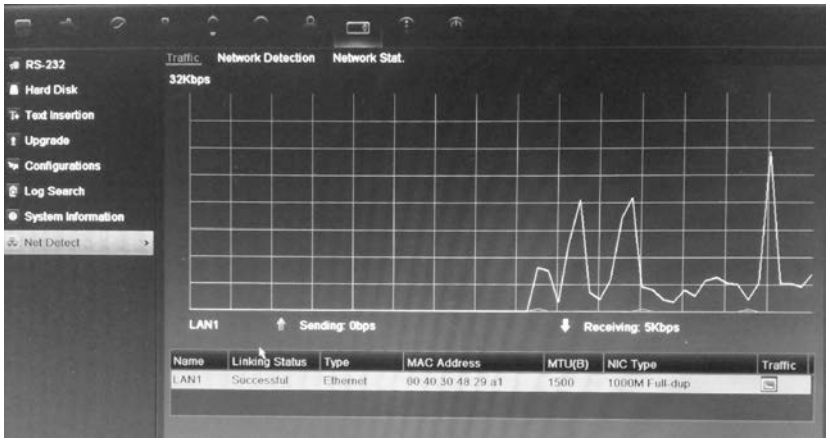
# Checking network status

You can easily check network traffic in order to obtain information about the DVR such as its linking status, MTU, sending/receiving rate, MAC address, and NIC type.

You can also check the network connection status by testing its delay and packet loss.

**To check network traffic:**

1. Click the **System Settings** icon in the menu toolbar and then click **Net detect** to display the Traffic screen. The information displayed is refreshed once a second.




**To check network delay and packet loss:**

1. Click the **System Settings** icon in the menu toolbar and then click **Net detect**.
2. Select the **Network Detection Status** tab.
3. Under the section “Network delay, Packet loss test”, enter the destination address and click **Test**.

   The test result appears in a pop-up screen.
4. If you need to check the current network parameters, click the **Network** button to get an overview.

**To check network statistics:**

1. Click the **System settings** icon in the menu toolbar and then click **Net detect**.
2. Select the **Network Stat.** tab.
3. The latest information is displayed on the bandwidth used by remote live and playback as well by Net Receive Idle and Net Send Idle. Click **Refresh** to update the information.

# Exporting network packet data

When the DVR is connected to a network, you can export the captured data packet to a, USB-flash disk, SATA/eSATA CD-RW and other local backup devices.

**To export network packet data:**

1. Click the **System Settings** icon in the menu toolbar and then click **Net detect**.
2. Select the **Network Detection Status** tab.
3. Under the section “Network packet export”, click **Refresh** to get a list of the local backup devices available. Select one from the list.
4. Click **Export**. Up to 1M of data can be exported at a time.

# Chapter 13
# HDD management

## Initializing HDDs

The in-built HDD must be initialized before it can be used. You can also re-initialize the HDD. However, all data on the HDD will be destroyed.

**To initialize a HDD:**

1. Click the **System Settings** icon in the menu toolbar and then click **Hard Disk** to display its screen.
2. Select the HDD to be initialized.
3. Click the **Initialize** button to begin initialization.

After the HDD has been initialized, the status of the HDD changes from Abnormal to Normal.

## Setting the HDD quota

You can allocate on a HDD the maximum permitted storage and snapshot picture capacities from each camera.

1. Click the **System Settings** icon in the menu toolbar and then click **Hard Disk**.
2. Click the **Storage mode** tab.
3. Under the Mode option, select **Quota**.

4. Select a camera whose storage capacity you want to change and enter the values in GB for maximum record capacity and maximum picture capacity. The maximum storage capacity of the HDD is listed.
5. Click **Apply** to save the settings.
6. If you want to copy these values to other cameras, click **Copy** and select the cameras. Click **OK**. Click **Apply** to save the settings.

# Setting HDD groups

Your DVR can organize multiple HDDs into groups. Videos from specified channels can be set to be recorded onto a particular HDD group.

**To set up a HDD group:**

1. Click the **System Settings** icon in the menu toolbar and then click **Hard Disk**.
2. Select the **Storage Mode** tab.

3. Under **Mode**, select **Group**.
4. Under **Record on HDD Group**, select the HDD group number.
5. Check the channels to be added to this group.

   **Note:** By default, all channels belong to HDD group 1.
6. Click **Apply** to save the settings.

# Setting the HDD property

You can change the behavior of your HDD by changing its property. It can be set to redundancy, read-only or read/write (R/W).

A HDD can be set to read-only to avoid important recorded files from being overwritten when the HDD becomes full.

Before changing the HDD property to “Redundancy”, there must be at least two HDDs installed in the DVR, you need to set the storage mode to “Group” and one of the other HDDs must be set to R/W. See “Setting HDD groups” above for more information.

**To change a HDD status property:**

1. Click the **System Settings** icon in the menu toolbar and then click **Hard Disk**.
2. Click the **HDD Information** tab.
3. Select the HDD whose property you want to change.
4. Click the **Edit** icon . The Local HDD Settings screen appears.
5. Click the desired HDD property for the selected HDD.
6. Click the group number for this HDD.
7. Click **Apply** to save and exit the screen.

   **Note**: Once set to read-only, the HDD cannot be used to save recorded files until it is set back to read/write (R/W). If the HDD that is currently being written to is set to read-only, the data is then recorded to the next HDD. If there is only one HDD present, setting it to read-only means the DVR cannot record.

# Checking HDD status

You can check the status of any of the installed HDDs on the DVR at anytime.

**To check the status of a HDD:**

1. Click the **System Settings** icon in the menu toolbar and then click **Hard Disk**.
2. Note the status of the HDDs listed under the Status column.

   If the status is listed as Normal or Sleeping, the HDD is in working order. If it is listed as Abnormal and has already been initialized, the HDD needs to be replaced. If the HDD is Uninitialized, you need to initialize it before it can be used in the DVR. Refer to “Initializing HDDs” on page 97 for more information.

**Note**: This information is also available under **System Settings > System Information > HDD** screen.

# Configuring HDD alarms

HDD alarms can be set to trigger when an HDD is uninitialized or in an abnormal state.

**To set HDD alarms:**

1. Click the **Alarm settings** icon in the menu toolbar and select **Notification**.
2. Select the notification event to configure under Notification Type box.
3. Select **HDD Full** and check the desired notification method. See “Description of alarm notification types” on page 81 for more information.

   Select **HDD Error** and check the desired notification method.

4. Click **Apply** to save the settings.

# Managing eSATA

If you are using an external e-SATA device connected to the DVR, you can configure the e-SATA to record/capture or export video.

Select the Export option when using the eSATA as a backup. See “Using Quick Archive” on page 59 for further information.

Select the Record/Capture option to record and capture video. Information on the eSATA for this purpose can be seen under **System settings > Hard Drive > HDD Information**.

**To set up the e-SATA device:**

1. Click the **Video Schedule** icon in the menu toolbar and select **More Settings**.
2. Under **eSATA**, select the desired option: **Record/Capture** or **Export**.
3. Click **Apply** to save the settings.

# Checking the S.M.A.R.T. information

S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) reports on a variety of hard drive attributes. It helps ensure that the HDD is functioning properly at all times while protecting video stored on the hard drive.

**To view the S.M.A.R.T. information of a HDD:**

1. Click the **System Settings** icon in the menu toolbar and then click **Hard Disk**.
2. Select the **S.M.A.R.T.** tab to display its screen.
3. Select the HDD whose data you want to see. A detail listing of S.M.A.R.T. information is displayed.

4. If you want to continue to use a HDD when the S.M.A.R.T. test has failed, check the box **Use when the disk has failed to self-evaluate**. Click **Apply** to save the settings.

# Chapter 14
# Camera settings

The TVR 41 can support up to 16 analog cameras.

## Configuring the OSD settings

The DVR lets you configure which information is displayed on-screen for analog cameras only.

The on-screen display (OSD) settings appear in live view mode and include the camera name, time and date. They also are included in recordings.

You can also adjust the transparency of the OSD relative to the background so that it is easier to read or is less prominent on screen.

**To configure the OSD settings:**

1. Click the **Camera Management** settings icon in the menu toolbar and select **OSD**.

2. Enter a name for the camera, if required.

   **Note:** Although you can enter a camera title for an IP camera, it will not be displayed on-screen. The other OSD menu options are not available for IP cameras.

3. Check the Display Name, Display Date, and Display Week boxes to display the camera name, date, and week.

4. Select a date format and a time format.

5. Select how you want the camera information displayed.

   Select one of the options from the drop-down list. Default is non-transparent/non-flashing.

   - Transparent & flashing
   - Transparent & not flashing
   - Non-transparent & flashing
   - Non-transparent & non-flashing

6. There are two red text boxes in the camera view screen; one for the camera name and the other for the date/time. Using the mouse, click and drag a text box to the desired position.
7. To copy the settings to other cameras, click **Copy** and select the desired cameras. Click **OK**.
8. Click **Apply** to save the settings and then **Back** to return to live view.

# Setting up privacy masking

You can define an area on screen to remain hidden from view. For example, you can choose to block the view of a camera when overlooking residential premises. This hidden area is referred to as privacy masking. Privacy masking cannot be viewed in live view or recorded mode, and appears as a blank area on the video image.

However, although you can select the privacy masking option for IP cameras, you cannot set up an area where it applies on-screen. Areas are selected from the IP camera itself. Refer to the IP camera user manual for information on doing this.

**To setup a privacy mask:**

1. Click the **Camera Management** icon in the menu toolbar and select **Privacy mask**.
2. Select the camera for which to set up privacy masking.
3. Check the **Enable Privacy Mask** box to enable the feature.
4. Set up the mask area. Up to four areas can be set.

   Using the mouse, click and drag a privacy-mask box in the camera view screen over the desired area. You can set up to four areas for privacy masking. Masked areas are dimmed and outlined in four different colors. Click **Apply** to save settings.

To delete a mask, check the desired mask and click **Clear** for that color mask.

5. To copy the settings to other cameras, click **Copy** and select the desired cameras. Click **OK**.
6. Click **Apply** to save the settings and then click **Back** to return to live view.

# Adjusting video image settings

You may need to adjust the camera image depending on the location background in order to get the best image quality.

The system has four preset mode settings for frequently encountered lighting conditions; Standard, Indoor, Low light and Outdoor. However, you can also manually adjust the brightness, saturation, contrast, and hue values using the Customize option. Adjustments to the settings affect both live view and recorded images.

**Note**: These options can also be modified from the image settings button on the live view quick access toolbar (see “Accessing frequently used commands” on page 33.)

**To adjust display settings:**

1. Click the **Camera Management** icon in the menu toolbar and select **Privacy mask**.
2. Select the camera for which to adjust the video image settings.
3. Select the desired mode value. Changes are seen immediately on screen.

   If “Customize” is selected, adjust the brightness, saturation, contrast, and hue values by dragging each scroll bar.
4. Click **Apply** to save the settings and then click **Back** to return to live view.

# Chapter 15
# DVR management

This chapter describes:

- Configuring general settings
- Managing users
- Updating system firmware
- Restoring default settings
- Viewing system information
- Viewing system logs

## General settings

Use this screen to configure the monitor image, GUI language, login password requirement, monitor resolution as well as to configure the DVR name and address. See Figure 31 on page 107.

The TVR 41 can support NTSC or PAL video output. The video format is auto detected.

The changes are immediately implemented once Apply is clicked to save the settings.

**Figure 31: Monitor setup screen: General Settings**

**Table 14: Description of the Monitor setup screen: General Settings**

| Option | Description |
|---|---|
| Language | Change the language of the system.<br>Select the desired language from the drop-down list and click **Apply**. The language displayed changes immediately. |
| Device name | Define the DVR name. The default name is TVR41.<br>Click the edit box and enter the new name from the soft keyboard. |
| Device address | The device number to use for the DVR when programming the remote control or keypad. The default value is 255. |
| Zone ID | Each DVR in a daisy chain must have a unique zone ID so that it can be controlled by a KTD-405.<br>The default value is 1. |
| VGA resolution | Define the VGA resolution.<br>Select one of the options from the drop-down list and click **Apply**. The selected resolution must be the same as that of the monitor. |
| HDMI resolution | Define the HDMI resolution.<br>Select one of the options from the drop-down list and click **Apply**. The selected resolution must be the same as that of the monitor. |
| Password required | Define whether a login password is required.<br>Check the box to enable/disable and click **Apply**. |
| Scaling output video | Enable/disable the monitor display of the main and spot monitor size to accommodate for differently sized monitors.<br>Check the box to enable/disable and click **Apply**. |
| Enable wizard | Define whether the wizard tool starts when the DVR is turned on.<br>Check the box to enable/disable and click **Apply**. |

**Figure 32: Monitor setup screen: More Settings**

**Table 15: Description of the Monitor setup screen: More Settings**

| Option | Description |
|---|---|
| Monitor standard | The video standard used is auto detected but can be manually changed.<br>Modify the video standard used to PAL or NTSC and click **Apply**. |

| Option | Description |
|---|---|
| Output mode | Define the desired output mode.<br>Select one of the options from the drop-down list: Standard, Bright, Gentle, or Vivid. |
| Monitor brightness | Modify the video output brightness.<br>Adjust the scroll bar point to the desired level and click **Apply**. |
| Event hint | Define whether the status icons appear on screen. See “Status information” on page 29 for more information. |
| Timebar transparent | Modify the transparency of the menus on-screen relative to the background to make the menu screens easier to read or less prominent on-screen. Default is non-transparent.<br>Select one of the options from the drop-down list. |
| Menu timeout | Define the time in minutes after which the menu screen reverts to live view mode.<br>Select a time from the drop-down list and click **Apply**. |
| Mouse pointer speed | Modify the speed of the mouse pointer.<br>Adjust the scroll bar point to the desired level and click **Apply**. |
| Other notification: Panel alarm LED | Check to enable the Motion alarm option. |
| Motion alarm | Define whether the status LEDs on the front panel start flashing when motion is detected.<br>Check the box to enable/disable and click **Apply**. |

# Updating system firmware

The firmware on the DVR can be updated using four methods:

- Via an USB device
- Over the network via an FTP server
- Via the DVR web browser
- Using TruVision Navigator. For further information, refer to the TruVision Navigator user manual.

The firmware upgrade file is labeled *TVR41.dav*.

**To update the system firmware using a USB device:**

1. Download on to a USB the latest firmware from our web site at:

   www.gesecurityproducts.eu/videoupgrades

   - Or -

   www.utcfssecurityproductspages.eu/videoupgrades

2. Connect the USB device to the DVR.
3. Click the **System Settings** icon in the menu toolbar.
4. Select **Upgrade** > **Local Upgrade**. The list of files on the USB is displayed.

5. Select the file and click **Upgrade**. Click **Yes** to begin the upgrade process.
6. When the upgrade process is completed, reboot the DVR.

**To update the system firmware via a FTP server:**

For engineering purposes only.

# Restoring default settings

**To restore the default factory settings of the DVR:**

1. Click the **System Settings** icon in the menu toolbar and select **Configuration**.
2. Click the **Default** tab. Click **OK** to confirm you want to restore default settings.

   **Note**: Network information such as IP address, subnet mask, gateway, MTU, NIC working mode, server port and default route are not restored to factory default settings.

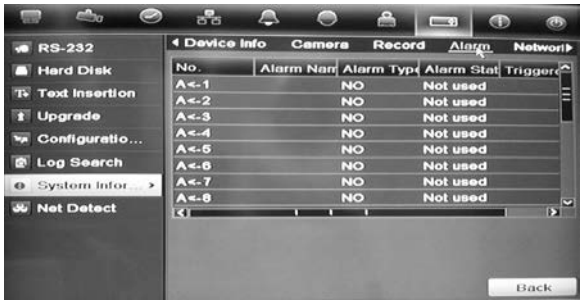
# Viewing system information

**To view system information:**

1. Click the **System Settings** icon in the menu toolbar and select **System Information**.
2. To view device information, click the **Device Info** tab.
3. To view camera information, click the **camera** tab.

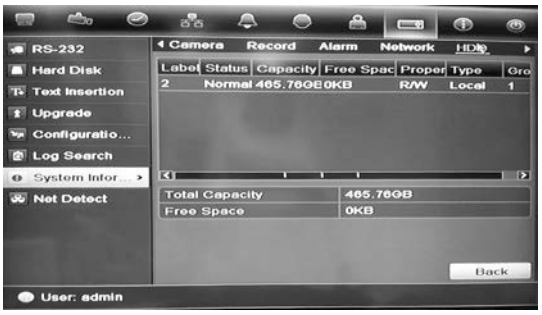
4. To view record information, click the **Record** tab.

5. To view alarm information, click the **Alarm** tab.




6. To view network information, click the **Network** tab.

7. To view HDD information, click the **HDD** tab.




8. Click **Back** to return to live view.

# Searching system logs for events

Many events of the DVR, such as operation, alarm and notification, are logged into the system logs. They can be viewed and exported at any time.

Up to 2000 log files can be viewed at once.

Log files can also be exported onto a USB device. The exported file is named according to the time it was exported. For example: *20120729124841logBack.txt*.

**Note**: Connect the backup device, such as a USB stick, to the DVR before commencing the log search.

**To search and export log files:**

1. Click the **System Settings** icon in the menu toolbar and select **Log search**.
2. Enter the search parameters and click **Search** to begin the search. The logs matching the search criteria are displayed.

3. To view more detail information about a particular log entry, select the entry and click or double-click the log entry.
5. If available, you can also view the associated video to the selected log entry by clicking its play button .
5. To export a log entry, select a log and click **Export**.
4. Click **Back** to return to live view.

# Chapter 16
# User management

By default the DVR comes with three user accounts: an Administrator account, an Operator account and a Guest account. These accounts provide multiple levels of access and functionality. See Table 16 below for a description of the different user accounts.

**Table 16: User accounts**

| User | Description |
|---|---|
| **Administrator** | The administrator account includes extended menu with full access to all settings. The Administrator has the authority to add, delete or configure parameters for many of the system functions.<br>There can only be one administrator.<br>The user name is admin. The name cannot be modified.<br>The default password is 1234. |
| **Operator** | The operator account includes reduced menu access to Video settings (inaccessible features are not visible).<br>The default user name is “operator”.<br>The default password is 2222. |
| **Guest** | The guest account includes menu access with no programming possibilities (inaccessible features are not visible).<br>The default user name is “guest”.<br>The default password is 3333. |

**Note:** The default passwords should be changed for security reasons.

## Adding a new user

Only a system administrator can create a user. You can add up to 31 new users.

The access privileges of Operator and Guest users are predefined and cannot be modified

**To add new users:**

1. Click the **User Management** icon in the menu toolbar to display its screen.
2. Click **Add** to enter the Add User screen.
3. Enter the new user's name and password. Both the user name and password can have up to 16 alphanumeric characters.
4. Select the new user's access level: Operator or Guest.
5. Enter the user's MAC address to let the user access the DVR from a remote computer with this MAC address.
6. Click **Apply** to save the settings and **OK** to return to the previous screen.
7. Define the user's permissions.

   Click the Permission button for the new user. In the Permissions pop-up screen check the required access privileges for local, remote and camera configuration. See "Customizing a user's access privileges" below for the permission descriptions for each group.

   Click **Apply** to save the settings and **OK** to return to the previous screen.
8. Click **Back** to return to live view.

# Customizing a user's access privileges

Only an administrator can allocate access privileges to Operator and Guest users. The access privileges can be customized for each user's needs. The administrator's access privileges cannot be changed.

There are three types of privilege settings: Local Configuration, Remote Configuration, and Camera Configuration.

**Note**: Only the administrator can restore factory default settings.

**Local configuration settings:**

- **Local Log Search:** Search and view logs of the DVR.
- **Local Parameter Settings:** Configure parameters and restore factory defaults. You can also import/export the configuration from the DVR.
- **Local Advanced Operation:** Access HDD management (including the initialization and modification of disk properties). Update system firmware as well as stop the I/O alarm output.
- **Local Shutdown/Reboot:** Shutdown or reboot the DVR.

**Remote configuration settings:**

- **Remote Log Search:** Remotely view logs that are saved on the DVR.
- **Remote Parameter Settings:** Remotely configure parameters, restore factory defaults parameters and import/export configuration.
- **Remote Camera Management:** Remotely enable and disable channels.
- **Remote Serial Port Control:** Configure settings for the RS-232 port.
- **Remote Video Output Control:** Configure settings for video output.
- **Two-Way Audio:** Use two-way radio between the remote client and the DVR.
- **Remote Alarm Control:** Remotely alert or control the relay output of the DVR. Alarm and notification settings must be configured properly to upload to host.
- **Remote Advanced Operation:** Remotely manage HDDs (initializing and setting properties for HDDs) as well as remotely update system firmware and clear the I/O alarm output.
- **Remote Shutdown/Reboot:** Remotely shutdown or reboot the DVR.

**Camera configuration settings:**

By default, all analog cameras are enabled for operators for each of these settings and none for guests.

- **Remote Live View:** Select and view live video over the network.
- **Local Manual Operation:** Locally start/stop manual recording on any of the channels, snapshots and video clips.
- **Local Playback:** Locally play recorded files that are on the DVR.
- **Remote Playback:** Remotely play and download recorded files that are on the DVR.
- **Remote PTZ Control:** Remotely control PTZ dome cameras.
- **Local Backup:** Locally back up recorded files from any of the channels.

**To customize a user's access privileges:**

1. Click the **User Management** icon in the menu toolbar to display its screen.
2. Click the Permission button for the user whose access privileges need to be changed. The Permissions pop-up screen appears.
3. Click **Apply** to save the settings.
4. Click the **OK** button to return to the previous screen.
8. Click **Back** to return to live view.

# Deleting a user

Only a system administrator can delete a user.

**To delete a user from the DVR:**

1. Click the **User Management** icon in the menu toolbar to display its screen.
2. Click the **Delete** button for the user to be deleted.
3. Click **Yes** in the pop-up screen to confirm deletion. The user is immediately deleted.
4. Click **Back** to return to live view.

# Modifying a user

A user's name, password, access level and MAC address can be changed. Only a system administrator can modify a user.

**To modify a user:**

1. Click the **User Management** icon in the menu toolbar to display its screen.
2. Click the Edit button for the user whose access privileges need to be changed. The Edit User pop-up screen appears.
3. Edit the user information and click **Apply** to save the settings. .
4. Click the **OK** button to return to the previous screen.
5. Click **Back** to return to live view.

# Changing the Admin password

The administrator's password can be changed in the **User Management** menu. Click the **Change Password** tab and enter the new information. The administrator's MAC address can be changed here too. Once completed, click **Apply** to save the settings.

# Chapter 17
# iTVRmobile

You can easily log on to the TVR 41 using the TruVision iTVRmobile application. Once installed on your iPhone, it can be used over a wireless network to remotely view live video from DVRs, IP cameras, PTZ cameras and DVSs. It can also be used to control PTZ cameras.

For detailed information on setting up and using the iTVRmobile application, please refer to the iTVRmobile user manual.

## Setup and login

Download the **TruVision TVRmobile** application from the iTunes Store to your iPhone. The iTVRmobile appears on the iPhone home page:

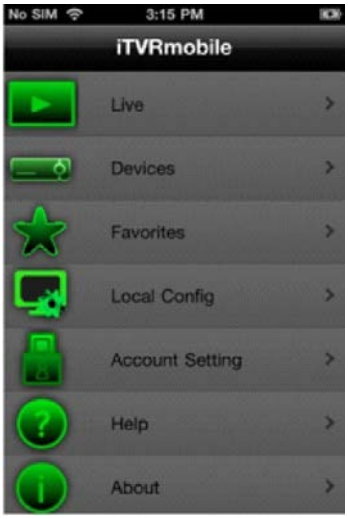
**Figure 33: iTVRmobile application icon**

You need to register an administrator when using this application for the first time. Enter the user name and password in the register interface and click **Register** to complete user registration.

The next time the application is used, the user name of the last user is displayed by default. When logging in, you also can enable **Auto Login** so that the application will automatically login next time.

Once logged in, the iTVRmobile main menu appears. See Figure 34 below for further information.

**Figure 34: Main menu description**




| | |
|---|---|
| Live | Live view mode and PTZ control. |
| Devices | Manage devices such as add a new device, delete a device, display information about the device. |
| Favorites | Define specific cameras as your favorites so that you can quickly jump to them. |
| Local Config | Configure the speed of PTZ control and auto login setup. |
| Account Setting | Password modification. |
| Help | Help information. |
| About | Software version. |

# Live view

Tap the iTVRmobile icon on the iPhone home page to open the application. Enter your user password, if requested. See Figure 35 for a description of the live view interface.

**Figure 35: Live view and toolbar icons**

The selected video tile is highlighted by a green frame

| Button | Description |
|---|---|
| | Tap to return to the main menu.<br>**Note**: This option is only available when in the iPhone is held in portrait orientation. |
| | This icon appears when there is no camera connected. Tap the cross to obtain the **Select Channel** screen and select a camera for live view from the list of devices. |
| | Tap to change the camera in the selected video tile. If there are already four video tiles open in multiview, the next camera selected will replace the camera that was first opened. |
| | **Stop**: Tap to stop live streaming of video from the selected camera. |

| | |
|---|---|
| | **Bookmark**: Tap to create bookmarks. Bookmarks are groups of cameras that can be accessed together. |
| | **Snapshot**: Tap to take a snapshot of the live view images. |
| | **PTZ control**: Tap to call up the PTZ control arrows on-screen for PTZ control. |

**To access live view:**

1. In the main menu, tap **Live** to access live view. Live view is in 2X2 multiview mode by default. The selected video tile has a green frame.
2. Double-tap or to open the list of devices, bookmarks and favorites available and select the desired camera.
3. Tap the desired device, such as a DVR. All cameras listed under this device are shown.
4. Tap the desired camera in the list. The live view immediately appears on-screen. By default it occupies one of the four video tiles.
5. To display another camera in live view, double-tap or again and select the desired camera from the list. Repeat for the other two video tiles, if required.
6. To stop live view for a selected camera, select a camera. The selected camera has a green frame. Tap . A green cross appears in the video tile.
7. To return to the main menu, tap **iTVRmobile**.

   Live view from the camera is not disconnected. You can, for example, change configuration settings and then return to live view by tapping again. The application returns to the live view of the selected camera.

# Controlling a PTZ camera

The application supports main and substream in live view. Substream is default. When selecting the main stream option in live view, please refer to the table below for the recommended parameter settings:

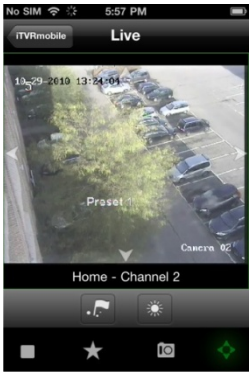
**Table 17: Main stream recommended parameters**

| Resolution | Frame rate | Bit rate |
|---|---|---|
| XVGA | 1 fps | 320 Kbps |
| HD900 | 1 fps | 320 Kbps |
| 720P | 1 fps | 320 Kbps |
| UXGA | 1 fps | 320 Kbps |

| Resolution | Frame rate | Bit rate |
|---|---|---|
| 1080P | 1 fps | 320 Kbps |
| SVGA | 4 fps | 320 Kbps |
| VGA | 4 fps | 320 Kbps |
| 4CIF | 6 fps | 512 Kbps |
| CIF | Max. | 320 Kbps |
| DCIF | 15 fps | 512 Kbps |
| 2CIF | Max. | 512 Kbps |
| QCIF | Max. | 320 Kbps |

**To control a PTZ camera:**

1. In the main menu, tap **Live** to access live view.
2. Tap to call up the PTZ toolbar and on-screen arrows.




3. Drag your finger across the on-screen arrows to carefully position the camera in the desired preset location.

   PTZ up  PTZ down  PTZ left  PTZ right

4. To call up a preset position, tap to bring up the Call/Set screen. Enter a preset number and tap **Call**. The camera moves to the preprogrammed position. Tap again to exit the preset configuration screen.
5. To zoom in and out of the selected camera image, pinch the screen to zoom in or out. This option is only available for PTZ cameras.
6. To adjust the brightness of the camera image, tap the iris icon to open the iris scrubber bar. Drag the playhead along the scrubber bar to adjust the image brightness.

# Device management

The device list is empty by default. You must first add the required devices to the iTVRmobile device list before you can access them.

**Note:** Up to 16 devices can be added to the application.

**To add a new device:**

1. In the main menu, tap **Devices**. The Devices page appears. All devices already added to the app are listed.
2. Tap **Add**. The New Device page appears.
3. Enter the following information:

   **Device name**: Enter the name of the device to be linked, such as a TruVision DVR or TruVision IP cameras. The name can have up to 16 alphanumeric characters.

   **Register mode**: Select either IP or DDNS. Use DDNS when there is no fixed IP address available.

   **Address**: Enter the IP or dynamic name address of the device.

   **Port**: Enter the com port address of the device. For example, 8000 (default).

   **User name**: Enter the device's user name. It can have up to 16 alphanumeric characters.

   **Password**: Enter the device's password.

   **Chan. no.**: Enter the number of cameras to be linked.
4. Tap **Save** to save the settings. The device is added to the device list.
5. In the Device page, tap **Add** again to add another device to the application or tap **iTVRmobile** to exit and return to the main menu.

**To modify or delete a device:**

1. In the main menu, tap **Devices**. The Devices page appears. All devices already added to the app are listed.
2. To modify the parameters of a device: Tap next to the selected device to be modified. The list of parameters that can be modified appears. Tap **Edit**. Tap the parameter to be modified and enter the new value using the keypad. Tap **Done** and then **Save** to save the changes or **Cancel** to abort and return to the Devices Detail screen.
3. To delete a device: Swipe your finger across the device to be deleted in the list. The Delete button appears. Tap **Delete**.
4. Tap **iTVRmobile** to exit and return to the main menu.

# Favorites

Use the **Favorites** menu to manage frequently used cameras and bookmarks in live view.

Tap and navigate to 'Channels'->'MENU'->'ADD' to go to the Favorites interface. Tap the device to display the cameras list. Select any camera to add to your favorites list by selecting it.

To delete an item in Favorites, in the main menu tap and navigate to 'Bookmarks' or 'Channels'. The list of cameras or bookmarks appears. Tap the "Delete" button to delete it.

# Local configuration

Use the **Local Config** menu to modify the speed of the pan and tilt movement of PTZ cameras as well as to enable/disable automatic login using the current user next time the applicatoin is used.

# Change passwords

Use the **Account Setting** menu to modify your current password. Enter the old password, the new password and then confirm new password to complete the change.

# Snapshots

The snapshot pictures are automatically saved in the Photos application.

# Appendix A
# Specifications

| | TVR 4104 | TVR 4108 | TVR 4116 |
|---|---|---|---|
| **Video & audio input** | | | |
| Video compression | H.264 | | |
| Analog video input | 4-ch, BNC (1.0 Vp-p, 75 Ω), PAL /NTSC self-adaptive | 8-ch, BNC (1.0 Vp-p, 75 Ω), PAL /NTSC self-adaptive | 16-ch, BNC (1.0 Vp-p, 75 Ω), PAL /NTSC self-adaptive |
| Audio compression | OggVorbis | | |
| Audio input | 4-ch, BNC (2.0 Vp-p, 75 Ω) | 8-ch, BNC (2.0 Vp-p, 75 Ω) | 16-ch, BNC (2.0 Vp-p, 75 Ω) |
| Two-way audio | 1-ch, BNC (2.0 Vp-p, 1 kΩ) | | |
| **Video & audio output** | | | |
| HDMI output | 1-ch, Resolution: 1920 × 1080P / 60 Hz, 1920 × 1080P / 50 Hz,1600 × 1200 / 60 Hz, 1280 × 1024 / 60 Hz, 1280 × 720 / 60 Hz, 1024 × 768 / 60 Hz | | |
| VGA output | 1-ch, Resolution: 1920 × 1080P / 60 Hz, 1600 × 1200 / 60 Hz, 1280 × 1024 / 60 Hz, 1280 × 720 / 60 Hz, 1024 × 768 / 60 Hz | | |
| CVBS output | 1-ch, BNC (1.0 Vp-p, 75 Ω), Resolution: PAL: 704 × 576; NTSC: 704 × 480 | | |
| Video spot output | 1-ch, BNC (1.0 Vp-p, 75 Ω), Resolution: PAL: 704 × 576; NTSC: 704 × 480 | | |
| Video loop output | 4-ch | 8-ch | 16-ch |
| Encoding resolution | 4CIF / 2CIF / CIF / QCIF | | |
| Frame rate | 25 fps (PAL) / 30 fps (NTSC) | | |
| Video bit rate | 32 to 4096 Kbps, or user defined (max. 4096 Kbps) | | |
| Audio output | 2-ch, BNC (Linear, 600 Ω) | | |
| Audio bit rate | 16 Kbps | | |

| | TVR 4104 | TVR 4108 | TVR 4116 |
|---|---|---|---|
| Dual-stream | Support \| (Sub-stream at CIF/QCIF: 25 fps (PAL) / 30 fps (NTSC)) | | |
| Stream type | Video, Video & Audio | | |
| Playback resolution | 4CIF / 2CIF / CIF / QCIF | | |
| Synchronous playback | 4-ch | 8-ch | 16-ch |
| **Hard disk** | | | |
| SATA | 8 SATA interfaces | | |
| e-SATA | 1 e-SATA interface | | |
| Capacity | Up to 4TB capacity for each disk | | |
| **External interface** | | | |
| Network interface | 1 RJ45 10M / 100M / 1000M Ethernet interface | | |
| Serial interface | 1 RS-232 interface (for ProBridge, Challenger, Technical Support);<br>1 RS-485 interface (for PTZ control);<br>1 RS-485 keyboard interface (for KTD405 keyboard control) | | |
| USB interface | 2, USB 2.0 | | |
| Alarm in | 16 | 16 | 16 |
| Alarm out | 4 | 4 | 4 |
| **Miscellaneous** | | | |
| Power supply | 100 to 240 VAC, 6.3 A, 50 to 60 Hz | | |
| Power consumption (without HDD or DVD-R/W) | ≤ 35 W | ≤ 40 W | ≤ 45 W |
| Operating temperature | -10 to +55 ºC (14 to 131 °F) | | |
| Relative humidity | 10 to 90% | | |
| Chassis | 19-inch rack-mounted 2U chassis | | |
| Dimensions (W x H x D) | 445 × 470 × 90 mm (17.5 × 18.5 × 3.54 in.) | | |
| Weight | ≤ 8 kg (17.6 lb.) (without HDD or DVD-R/W) | | |

# Appendix B
# PTZ protocols

| | |
|---|---|
| Interlogix-485 | PHILIPS |
| Interlogix-422 | PHILIPS-3 |
| Kalatel | SAE |
| DSCP | Samsung |
| HIKVISION | Siemens |
| Honeywell | SONY-EVI-D30/31 |
| INFINOVA | SONY-EVI-D70 |
| KTD-348 | SONY-EVI-D100/P |
| LG MULTIX | TECHWIN |
| LILIN | VICON |
| PANASONIC_CS850 | YOULI |
| PELCO-D | |
| PELCO-P | |

# Appendix C
# TVK-505U keypad

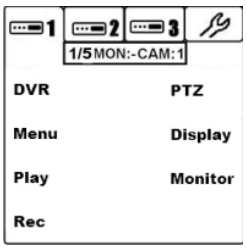
## Using a TVK-505U keypad

Use the keypad to carry out functions similar to the front panel buttons. For detailed keypad instructions, refer to the TVK-505U controller keypad user manual.

### Setting up a TVK-505U keypad to work with the TVR 41

**To set up a TVK-505U keypad:**

1. In the keypad live view menu, press the Ⓔ or Ⓒ button to select the DVR tab required.




2. Press the option **DVR**.
3. Enter the number of the DVR. The value must be between 0 and 255.
4. Press the Ⓔ button to confirm.

   The message, MASTER ENABLED, momentarily appears.

**To access the programming menus of a PTZ dome camera using a TVK-505U keypad:**

1. In the keypad live view menu press the **PTZ** button.

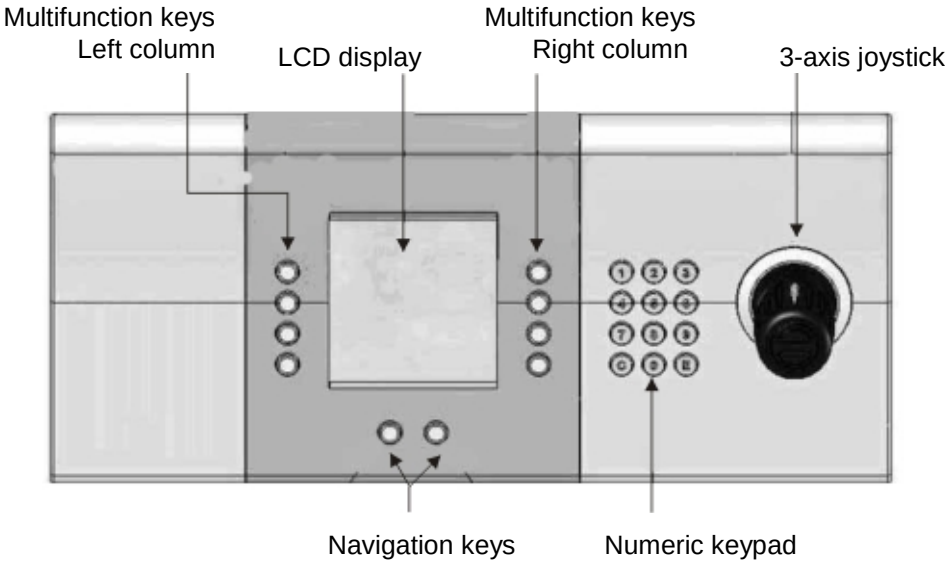
   Keypad enters PTZ mode.

   **Note:** For information on programming a PTZ dome camera, please refer to the PTZ camera user manual.

## Navigating the menus with the TVK-505U keypad

You can use the keypad joystick and keys to navigate through the menu system. See Figure 36 below. Please refer to the user manual for further information on their use.

**Figure 36: Description of the TVK-505U keypad**



# Appendix D
# KTD-405 keypad

## Supported firmware

| | |
|---|---|
| TVR 4116-XXX firmware | 4.0j or higher |
| KTD-405U (-2DU) keypad firmware: | 1.4.00 |

**Note**: XXX is represents the DVR storage configuration such as 500 = 500 GB, 1T = 1 TB, etc.

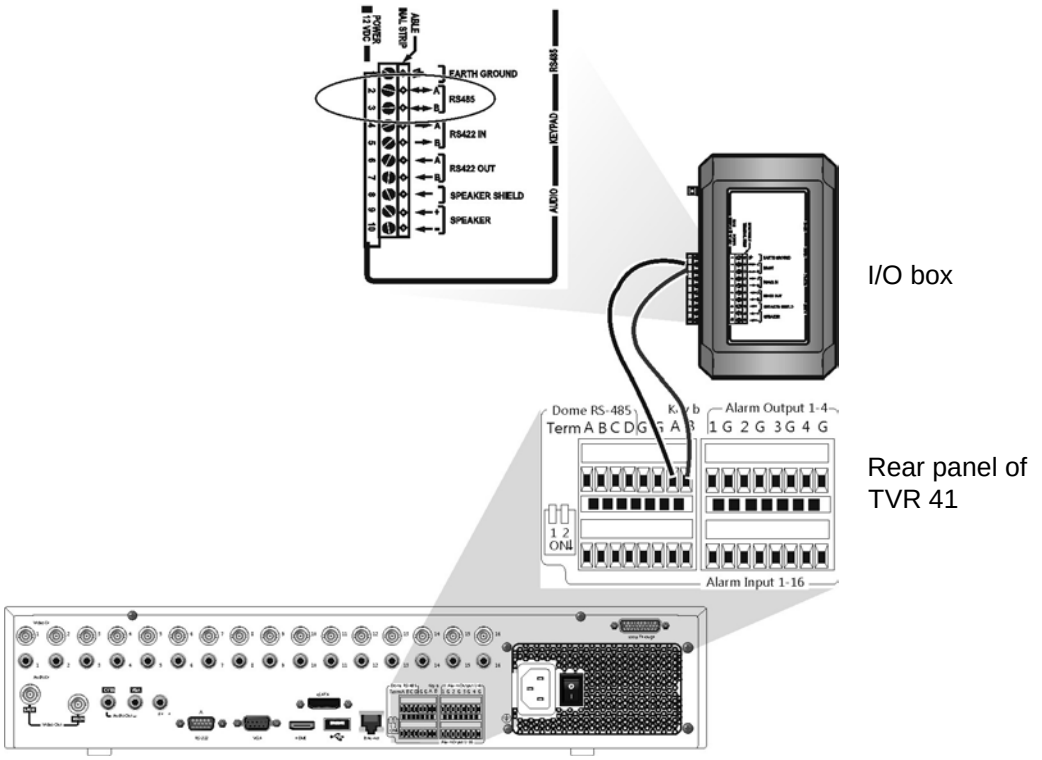
## Wiring the keypad

Connect the RS-485 bus of the KTD-405 I/O box to the TVR 41 Keypb A/B screw terminal port.

**Table 18: Keypad and DVR connections**

| KTD-405 I/O box | TVR 41 connection |
|---|---|
| RS-485 A | Keyb A |
| RS-485 B | Keyb B |

**Figure 37: Keypad and DVR connections**




# Setting up the keypad to work with the TVR 41

The keypad must be in zone mode to connect correctly with the TVR 41.

Further information on connecting and programming the KTD-405 keypad can be found in the user manual.

**To set the keypad in zone mode:**

1. Log into the keypad using the Admin password. Hold down the Enter button (↵) until a beep sounds and then enter the following code: **1 4 7 6.** Push the **seq** button to confirm.
2. Scroll through the menus with the ⏩ button until this menu appears:

   ```
   OPERATING MODE:
   DIGIPLEX
   ```

3. Change *Operating Mode* to *Zone* by moving the joystick down.
4. Quit the menu by pressing the **seq** button. The display will show, for example:

   ```
   ZONE --ZONE TITLE
   CAMERA --MONITOR
   ```

5. To connect it to the DVR, press the **zone** button and enter the ID number of the TVR 41. The default value is “1”.
6. To configure the DVR zone ID number, at the DVR enter the System View screen by selecting **System** in the main menu. Under Zone ID, enter the zone ID value. The default value is “1”.

   **Note**: The zone ID value must be identical for the DVR and keypad.

   The TVR 41 is now connected to the KTD-405 keypad.

**To configure the TVR 41 device address:**

1. Click the **Display Mode Settings** icon in the menu toolbar and select **Monitor**.
2. Under the Device address edit box enter a numeric value. The default address for the keypad is “255”. Click **Apply**

## TVR 41 and keypad functions

The KTD-405U acts as a DVR control keypad when connected to the TVR 41. The keypad mimics many of the functions available from the front panel of the TVR 41.

### Unavailable TVR 41 functions

The following TVR 41 functions are unavailable when using the keypad to control the TVR 41:

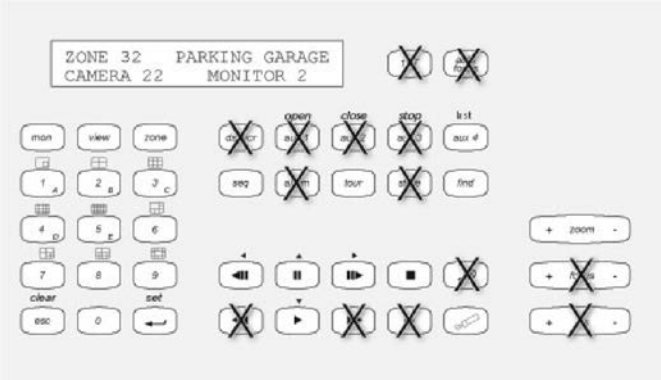
- Export video
- Eject CD/DVD
- Preset and shadow tour
- Select motion detection or tampering zones
- Archive records
- Capture video

If these functions are required, it is recommended to use a mouse in conjunction with the keypad as all TVR 41 functions will then be available.

### Unavailable keypad functions

The following keypad buttons are unavailable when using the keypad to control the TVR 41:

**Figure 38: Unavailable keypad buttons**




| | | |
|---|---|---|
| DSC/VCR | Autofocus | ● (Record mode) |
| Aux 1 | Alarm | Store |
| Aux 2 | Iris +/- | Fast forward |
| Aux 3 | Focus +/- | Fast backward |
| Ist | (Magnification) | |

# Operating the keypad

You can navigate the TVR 41 menus using the keypad buttons and joystick. However, not all maneuvers are available using the joystick.

See Table 19 on page 133 for the description of the DVR keypad mapping when using the KTD-405 keypad series. See Figure 38 above for a list of the keypad functions that are unavailable when connected to the TVR 41

### Example 1: To enter your password in the login screen using the keypad

1. In live view mode, press **esc** to activate the Login screen.
2. Press and hold **esc** and then press the arrow buttons ( **down**, **up**, **left**, **right**) to move the cursor to the Password edit box. Once in the password box, release **esc**.
3. Press **Enter** (↵) to activate the virtual keyboard.
4. Press and hold **esc** and then press the arrow buttons to reach the first digit of the password. Release **esc** and press **Enter** (↵) to select the digit.
5. Repeat steps 2 to 4 for each digit of the password.
6. Move the cursor to the Enter button on the virtual keyboard and press **esc** on the KTD-405 keypad to enter the password.
7. Press and hold **esc** and then press the arrow buttons to navigate the cursor to activate OK button on the Login screen.
8. Press ↵. The main menu appears.

### Example 2: To modify a menu option using the keypad

1. In the main menu press and hold **esc** and then press the arrow buttons to navigate to the desired menu icon (for example, Display Mode Settings).
2. Press ↵ to enter **Display Mode Settings** menu.
3. Press ⏩ or ⏪ to scroll to the menu tab, Layout.
4. When in the desired menu screen, press and hold **esc** and then press the arrow buttons (**up,** **down**) to navigate the cursor to the option, **Layout**.
5. Press ↵ to activate the dropdown menu.
6. Press and hold **esc** and then press the up/down arrow buttons to navigate to the desired option.
7. Press ↵ to select the option.
8. Press and hold **esc** and then press the up/down arrow buttons to navigate to Apply. Press ↵ to select it. Then navigate to **Back** to return to live view.

## TVR 41 mapping to the KTD-405 keypad

**Table 19: TVR 41 mapping to the KTD-405 keypad**

| Task | Keypad action | Further information |
|---|---|---|
| **• Menu mode** | | |
| Call up or exit menu | In live view, press **esc**. | |
| Move through the menus | Press and hold **esc** and then press the arrow buttons. | **Down**, **Up**, **Left**, **Right** |
| Move between menu tabs | Press ⏩ or ⏪ to switch between menu tabs. | |
| Navigate to a menu option | Press and hold **esc** and then press the arrow buttons. | **Down**, **Up**, **Left**, **Right** |
| Select a character or menu option | Press **Enter** (↵). | **Note**. If you press **esc** before pressing **Enter**, you quit the menu without saving any changes. It is the same as cancel. |
| Select the zone ID | Press **zone** to connect the keypad to the DVR. | |
| **• Live view mode** | | |
| Call up a single camera | Press **0** to **9** and then press **Enter** (↵). | Using the numeric buttons **0** to **9**, enter the number of the camera and then press **Enter** (↵). |
| Call up multiview screens | Press **view** and then continue to press button **5** to scroll through the options available. | |

| Task | Keypad action | Further information |
|---|---|---|
| Sequence through cameras | Press the **seq** button to scroll through the cameras in full screen. | |
| Sequence through multiview screens | Press and hold **esc** and then press the left/right arrow buttons | |
| Switch between monitor A and monitor B | Press the **mon** button and button **1** to switch to monitor A.<br>Press the **mon** button and button **2** to switch to monitor B. | To return to the previously selected monitor, you must deselect the current monitor by re-entering the combination again. So to return to monitor B, press **mon 1** to return to monitor B, or press **mon 2** to return to monitor A,<br>**Note**: The keypad display will always indicate monitor A even when monitor B is selected. |
| Manually acknowledge an alarm | Press **Alarm**. | |
| **• PTZ functions** | | |
| Enter PTZ mode | In live view mode, press **Enter** (↵). | |
| PTZ functions (Up, Down, Left, Right, Zoom in, Zoom out) | Move the joystick to move the dome up, down, left and right<br>Press **zoom+** and **zoom-**. | **KTD-405U**: Turn the knob on the joystick to zoom in/zoom out.<br>**KTD-405-2DU**: Press the **zoom+** and **zoom-** buttons. |
| Leave PTZ mode | Press **esc**. | |
| **• Playback functions** | | |
| Search for recorded video | Press . | Once password is entered, the **Advanced Search** menu appears. |
| Instant playback | Press ▶ when in full screen. | Instant playback of the currently selected camera. Default time is 5 minutes.<br>Other cameras listed on-screen can only be accessed using the mouse. |
| Stop playback | Press ■ to stop playback and return to live view mode. | |
| Pause playback | Press ⏸ to pause playback. Press ▶ to restart. | |
| Replay the current file. | Press **aux4** to replay the current file. | Starts at the beginning of the file. |

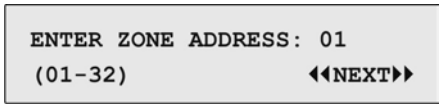
| Task | Keypad action | Further information |
|---|---|---|
| Change playback speed | Press and hold **esc** and then press the left/right arrow buttons | |
| Jump 30 seconds forwards or backwards during playback | Press and hold **esc** and then press the up/down arrow buttons | |

## Selecting an IP camera using the keypad

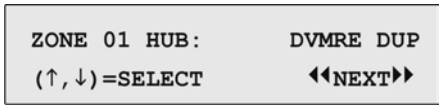
The TVR 41 can support up to 16 analog cameras. To be able to control up to 16 cameras using the keypad, you may need to change the number of TVR 41 camera inputs controlled by the keypad. The default number of TVR 41 camera inputs controlled by the keypad is 16.

**To change the number of TVR 41 camera inputs controlled by the keypad:**

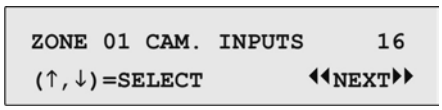
1. Hold down the Enter button (↵) until a beep sounds and then enter the following code: **1 4 7 6.** Push the **seq** button to confirm.
2. Scroll through the menus with the ⏩ button until this menu appears:




3. Enter the DVR address to be configured and press ↵.
4. Scroll through the menus with the ⏩ button until this menu appears:




5. Press the up/down arrow buttons to navigate to SYM DVR.
6. Scroll through the menus with the ⏩ button until this menu appears:




7. Press the up/down arrow buttons to navigate to 32.
8. Repeat steps 3 to 7 for each DVR address in the keypad.

## Controlling a camera

When setting up and controlling your cameras in zone mode, refer to Table 20 on page 136 for the list of default PTZ addresses associated with a zone ID. This value is automatically populated in the system. You can modify the PTZ address in the PTZ menu to meet customer requirements (see “Configuring PTZ settings” on page 39).

**Table 20: Default PTZ camera addresses by zone ID**

| Camera input | Zone ID of TVR 41 | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| 1 | 0 | 32 | 64 | 96 | 128 | 160 | 192 | 224 | 256 | 288 | 320 | 352 | 384 | 416 | 448 | 480 |
| 2 | 1 | 33 | 65 | 97 | 129 | 161 | 193 | 225 | 257 | 289 | 321 | 353 | 385 | 417 | 449 | 481 |
| 3 | 2 | 34 | 66 | 98 | 130 | 162 | 194 | 226 | 258 | 290 | 322 | 354 | 386 | 418 | 450 | 482 |
| 4 | 3 | 35 | 67 | 99 | 131 | 163 | 195 | 227 | 259 | 291 | 323 | 355 | 387 | 419 | 451 | 483 |
| 5 | 4 | 36 | 68 | 100 | 132 | 164 | 196 | 228 | 260 | 292 | 324 | 356 | 388 | 420 | 452 | 484 |
| 6 | 5 | 37 | 69 | 101 | 133 | 165 | 197 | 229 | 261 | 293 | 325 | 357 | 389 | 421 | 453 | 485 |
| 7 | 6 | 38 | 70 | 102 | 134 | 166 | 198 | 230 | 262 | 294 | 326 | 358 | 390 | 422 | 454 | 486 |
| 8 | 7 | 39 | 71 | 103 | 135 | 167 | 199 | 231 | 263 | 295 | 327 | 359 | 391 | 423 | 455 | 487 |
| 9 | 8 | 40 | 72 | 104 | 136 | 168 | 200 | 232 | 264 | 296 | 328 | 360 | 392 | 424 | 456 | 488 |
| 10 | 9 | 41 | 73 | 105 | 137 | 169 | 201 | 233 | 265 | 297 | 329 | 361 | 393 | 425 | 457 | 489 |
| 11 | 10 | 42 | 74 | 106 | 138 | 170 | 202 | 234 | 266 | 298 | 330 | 362 | 394 | 426 | 458 | 490 |
| 12 | 11 | 43 | 75 | 107 | 139 | 171 | 203 | 235 | 267 | 299 | 331 | 363 | 395 | 427 | 459 | 491 |
| 13 | 12 | 44 | 76 | 108 | 140 | 172 | 204 | 236 | 268 | 300 | 332 | 364 | 396 | 428 | 460 | 492 |
| 14 | 13 | 45 | 77 | 109 | 141 | 173 | 205 | 237 | 269 | 301 | 333 | 365 | 397 | 429 | 461 | 493 |
| 15 | 14 | 46 | 78 | 110 | 142 | 174 | 206 | 238 | 270 | 302 | 334 | 366 | 398 | 430 | 462 | 494 |
| 16 | 15 | 447 | 79 | 111 | 143 | 175 | 207 | 239 | 271 | 303 | 335 | 367 | 399 | 431 | 463 | 495 |
| 17 | 16 | 48 | 80 | 112 | 144 | 176 | 208 | 240 | 272 | 304 | 336 | 368 | 400 | 432 | 464 | 496 |
| 18 | 17 | 49 | 81 | 113 | 145 | 177 | 209 | 241 | 273 | 305 | 337 | 369 | 401 | 433 | 465 | 497 |
| 19 | 18 | 50 | 82 | 114 | 146 | 178 | 210 | 242 | 274 | 306 | 338 | 370 | 402 | 434 | 466 | 498 |
| 20 | 19 | 51 | 83 | 115 | 147 | 179 | 211 | 243 | 275 | 307 | 339 | 371 | 403 | 435 | 467 | 499 |
| 21 | 20 | 52 | 84 | 116 | 148 | 180 | 212 | 244 | 276 | 308 | 340 | 372 | 404 | 436 | 468 | 500 |
| 22 | 21 | 53 | 85 | 117 | 149 | 181 | 213 | 245 | 277 | 309 | 341 | 373 | 405 | 437 | 469 | 501 |
| 23 | 22 | 54 | 86 | 118 | 150 | 182 | 214 | 246 | 278 | 310 | 342 | 374 | 406 | 438 | 470 | 502 |
| 24 | 23 | 55 | 87 | 119 | 151 | 183 | 215 | 247 | 279 | 311 | 343 | 375 | 407 | 439 | 471 | 503 |
| 25 | 24 | 56 | 88 | 120 | 152 | 184 | 216 | 248 | 280 | 312 | 344 | 376 | 408 | 440 | 472 | 504 |
| 26 | 25 | 57 | 89 | 121 | 153 | 185 | 217 | 249 | 281 | 313 | 345 | 377 | 409 | 441 | 473 | 505 |
| 27 | 26 | 58 | 90 | 122 | 154 | 186 | 218 | 250 | 282 | 314 | 346 | 378 | 410 | 442 | 474 | 506 |
| 28 | 27 | 59 | 91 | 123 | 155 | 187 | 219 | 251 | 283 | 315 | 347 | 379 | 411 | 443 | 475 | 507 |
| 29 | 28 | 60 | 92 | 124 | 156 | 188 | 220 | 252 | 284 | 316 | 348 | 380 | 412 | 444 | 476 | 508 |
| 30 | 29 | 61 | 93 | 125 | 157 | 189 | 221 | 253 | 285 | 317 | 349 | 381 | 413 | 445 | 477 | 509 |
| 31 | 30 | 62 | 94 | 126 | 158 | 190 | 222 | 254 | 286 | 318 | 350 | 382 | 414 | 446 | 478 | 510 |
| 32 | 31 | 63 | 95 | 127 | 159 | 191 | 223 | 255 | 287 | 319 | 351 | 383 | 415 | 447 | 479 | 511 |

# Appendix E
# Maximum pre-recording times

The maximum pre-recording time that can be selected depends on the bit rate. Frame rate, resolution and image quality do not impact time.

**Note**: This information only applies when the bit rate is set to Constant (see “Initializing recording settings” on page 73 for more information).

| Constant bit rate | Maximum pre-recording time (seconds) |
|---|---|
| 32 | 30 |
| 48 | 30 |
| 64 | 30 |
| 80 | 30 |
| 96 | 30 |
| 128 | 30 |
| 160 | 30 |
| 192 | 30 |
| 224 | 30 |
| 256 | 30 |
| 320 | 30 |
| 384 | 30 |
| 448 | 30 |
| 512 | 30 |
| 640 | 30 |
| 768 | 30 |
| 896 | 30 |
| 1024 | 30 |
| 1280 | 25 |
| 1536 | 20 |

| Constant bit rate | Maximum pre-recording time (seconds) |
|---|---|
| 1792 | 15 |
| 2048 | 15 |
| 3072 | 10 |
| 4096 | 5 |

# Appendix F
# Supported PTZ commands

**Table 21: Supported PTZ commands by camera protocols (Part 1)**

| | PTZ command | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Protocol** | **Tilt up** | **Tilt down** | **Pan left** | **Pan right** | **Left up** | **Left down** | **Right up** | **Right down** | **Auto pan** | **Zoom +** | **Zoom -** | **Focus +** | **Focus -** |
| Interlogix-485 | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| Interlogix-422 | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| KALATEL | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| DSCP | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| HIKVISION | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y | Y |
| Honeywell | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| INFINOVA | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| KTD-348 | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| LG MULTIX | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| LILIN | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| PANASONIC_CS850 | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| PELCO-D | Y | Y | Y | Y | Y* | Y* | Y* | Y* | Y | Y | Y | Y | Y |
| PELCO-P | Y | Y | Y | Y | Y* | Y* | Y* | Y* | Y | Y | Y | Y | Y |
| PHILIPS | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| PHILPS-3 | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| SAE | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| Samsung | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| Siemens | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |
| SONY-EVI-D30/31 | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N |
| SONY-EVI-D70 | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N |
| SONY-EVI-D100/P | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N |
| TECHWIN | Y | Y | Y | Y | N | N | N | N | N | N | N | N | N |
| VICON | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |

| | PTZ command | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Protocol** | **Tilt up** | **Tilt down** | **Pan left** | **Pan right** | **Left up** | **Left down** | **Right up** | **Right down** | **Auto pan** | **Zoom +** | **Zoom -** | **Focus +** | **Focus -** |
| YOULI | Y | Y | Y | Y | N | N | N | N | N | Y | Y | Y | Y |

*: Hikvision only.

### Table 22: Supported PTZ commands by camera protocols (Part 2)

| | PTZ command | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Protocol** | **Iris+** | **Iris-** | **Light** | **Wiper** | **Zoom area** | **Center** | **Menu** | **Preset** | **Tour** | **Shadow tour** |
| Interlogix-485 | Y | Y | N | N | N | N | N | Y | N | Y |
| Interlogix-422 | Y | Y | N | N | N | N | N | Y | N | Y |
| KALATEL | Y | Y | N | N | N | N | N | Y | N | Y |
| DSCP | Y | Y | N | N | N | N | N | Y | N | Y |
| HIKVISION | Y | Y | N | N | Y | Y | Y | Y | Y | Y |
| Honeywell | Y | Y | N | N | N | N | N | N | N | N |
| INFINOVA | Y | Y | N | N | N | N | N | Y | N | Y |
| KTD-348 | Y | Y | N | N | N | N | N | Y | N | Y |
| LG MULTIX | Y | Y | N | N | N | N | N | Y | Y | Y |
| LILIN | Y | Y | N | N | N | N | N | N | N | N |
| PANASONIC_CS850 | Y | Y | N | N | N | N | N | Y | N | Y |
| PELCO-D | Y | Y | Y** | Y# | N | N | N | Y | Y | Y |
| PELCO-P | Y | Y | N | N | N | N | N | Y | Y | Y |
| PHILIPS | Y | Y | N | N | N | N | N | N | N | N |
| PHILPS-3 | Y | Y | N | N | N | N | N | N | N | N |
| SAE | Y | Y | N | N | N | N | N | Y | Y | Y |
| Samsung | Y | Y | N | N | N | N | N | Y | N | Y |
| Siemens | Y | Y | N | N | N | N | N | Y | N | Y |
| SONY-EVI-D30/31 | N | N | N | N | N | N | N | N | N | N |
| SONY-EVI-D70 | N | N | N | N | N | N | N | N | N | N |
| SONY-EVI-D100/P | N | N | N | N | N | N | N | N | N | N |
| TECHWIN | Y | Y | N | N | N | N | N | Y | N | N |
| VICON | Y | Y | N | N | N | N | N | N | N | N |
| YOULI | Y | Y | N | N | N | N | N | Y | N | N |

** : Aux. 2
# : Aux. 1

# Appendix G
# Default menu settings

| | | | |
|---|---|---|---|
| **Display mode setting** | | | |
| | Monitor | | |
| | | General | |
| | | | Language: English |
| | | | Device name: Embedded Net DVR |
| | | | Device address: 255 |
| | | | Zone ID: 1 |
| | | | VGA resolution: 1280*1024/60HZ |
| | | | HDMI resolution：1920*1080/60HZ(1080P) |
| | | | Password required : Yes |
| | | | Scale output video: Yes |
| | | | Enable wizard: Yes |
| | | More setting | |
| | | | Monitor standard: NTSC/PAL. Auto detect at booting. |
| | | | Output mode: Standard |
| | | | Monitor brightness: 5 |
| | | | Event hint: Yes |
| | | | Time bar transparent: Yes |
| | | | Menu timeout: 5 min |
| | | | Mouse pointer speed: Lower |
| | Layout | | |
| | | General | |
| | | | Video output interface: VGA |
| | | | Live view mode: 4*4 |
| | | | Dwell time: No swicth |
| | | | Enable audio output: No |
| | | | Event output: HDMI |
| | | | Full screen monitoring dwell time: 10 s |

| | | |
|---|---|---|
| | View | |
| | | Video output interface: VGA |
| | | 16 chan: 4*4 -A1 to A16 |
| | | 8 chan: 3*3 - A1 to A8+1black screen |
| | | 4 chan: 2*2 - A1 to A4 (Different with PRD-5.1-138) |
| Time | | |
| | Time setting | |
| | | Time Zone: GMT -8 |
| | | Date Format: MM-DD-YYYY |
| | | System date: Current system date |
| | | System time: Current system time |
| | | Auto DST Adjustment: No |
| | | Enable DST: No |
| | | From: Apr 1st Sun 2:00 |
| | | To: Oct last Sun 2:00 |
| | | DST bias: 60 min |
| Holiday | | |
| | Holiday setting | |
| | | Status: All disable; Start date: 1st. Jan; End date: 1st Jan |
| **Camera Management** | | |
| OSD | | |
| | OSD setting | |
| | | Camera: Analog 1 |
| | | Camera name: Camera 01 |
| | | Display name: Yes |
| | | Display date: Yes |
| | | Display week: Yes |
| | | Date format: MM-DD-YYYY |
| | | Time format: 12-hour |
| | | Display mode: Not transparent & not flashing |
| Image | | |
| | Image setting | |
| | | Camera: Analog 1 |
| | | Mode: Standard |

- Motion
  - Motion detection setting
    - Camera: All
    - Enable motion detection: No
    - Rule: Trigger channel [camera-self]; Alarm schedule: All day for whole week; Rule: (Null)
    - Sensitivity: Middle
    - Target size: 1
    - Zone: Full screen
  - Privacy mask
    - Privacy mask setting
      - Camera: All
      - Enable privacy mask: No
      - Zone:  (Null)
  - Tamper proof
    - Tamper-proof setting
      - Camera: All
      - Enable tamper proof: No
      - Rule: Alarm schedule all day for whole week; Rule: (Null)
      - Sencitivity: Low
      - Zone: (Null)
  - Video loss
    - Video loss setting
      - Camera: All
      - Enable video loss Alarm: Disable
      - Rule: Alarm schedule all day for whole week; Rule: (Null)

- Video Schedule
  - Schedule
    - Record
      - Camera: All
      - Enable Schedule: Enable
      - Schedule: All day for whole week TL-Hi
  - Encoding
    - Record
      - Camera: All
      - Encoding parameters: ->
      - Stream type  ->

- Resolution ->
- Bit rate type ->
- Video quality ->
- Frame rate ->
- Max. Bit rate mode ->
- Max. Bit rate ->
- Pre-record:  5 s
- Post-record:  5 s
- Auto delete:  0
- Record audio:  Yes

Capture

- Camera: All
- Resolution: 4 CIF
- Picture quality: Medium

V-stream

- Enable V-stream: No
- Frame rate : 25 fps
- Max. bit rate mode:  General
- Max. bit rate: 1792

More settings

More settings

- Event priority: Text In < Motion
- Overwrite: yes
- eSATE: Record/Capture

Net working setting

General

General

- NIC Type: 10/100/1000M self-adaptive
- Enable DHCP:  Enable
- IPv4 address: 192.168.1.82
- IPv4 subnet mask: 255.255.255.0
- IPv4 default gateway: 192.168.1.1
- IPv6 address1:  fe80::240:3dff:fe7e:926f/64
- IPv6 address2: (Null)
- IPv6 address gateday: (Null)
- Mac address: (It depends)
- MTU: 1500
- Preferred DNS server: (Null)

| | | |
|---|---|---|
| | | Alternate DNS server: (Null) |
| PPPoE | | |
| | PPPoE | |
| | | Enable PPPoE: Disable |
| | | User name: (Null) |
| | | Password: (Null) |
| | | Confirm: (Null) |
| DDNS | | |
| | DDNS | |
| | | DDNS: Disable |
| | | DDNS type: ezDDNS |
| | | Server address: www.tvr-ddns.net |
| | | Host Name: (Null) |
| | | NAT: Disable |
| | | Nat server port: 8000->0 |
| | | Nat HTTP port: 80->0 |
| NTP | | |
| | NTP | |
| | | Enable NTP: Disable |
| | | Interval:60min |
| | | NTP server: time.nist.gov |
| | | NTP Port:123 |
| Email | Email | |
| | | (Null) |
| FTP | FTP | |
| | | (Null) |
| SNMP | SNMP | |
| | | (Null) |
| More settings | | |
| | More settings | |
| | | Alarm host IP: (Null) |
| | | Alarm host port: 0 |
| | | Server port: 8000 |
| | | HTTP port: 80 |
| | | Multicast IP: (Null) |
| | | RTSP server port: 554 |

- Alarm setting
  - Alarm list
    - Alarm Inputs
      - (Null)
    - Alarm Outputs
      - (Null)
  - Alarm Input
    - Alarm Input
      - Alarm input no.: All
      - Alarm name: (Null)
      - type: No
      - Setting: Disable
      - Rule: Trigger No channel, all day for whole week; Rule (Null); PTZ link: (Null)
  - Alarm Output
    - Alarm Output
      - Alarm output no.: All
      - Alarm name: (Null)
      - Time out: 5 s
      - Rule: All day for whole week
    - Manual Alarm
      - Trigger none
  - Notification
    - Notification
      - HDD full: (Null)
      - HDD error: Audio warning
      - Network disconnected: (Null)
      - IP conflicted: (Null)
      - Illegal login: (Null)
      - Abnormal video signal: (Null)
      - Input/output video standard mismatch: Audio
      - Abnormal record/capture: Audio
- PTZ setting
  - General
    - General
      - Camera: All
      - Baud rate: 9600
      - Date bit: 8

| | | | |
|---|---|---|---|
| | | | Stop bit: 1 |
| | | | Parity:  None |
| | | | Flow ctrl: None |
| | | | PTZ protocol: Interlogix 485 |
| | | | Address: 0 to 15 for camera 1 to 16 |
| | More settings | | |
| | | (Null) | |
| User setting | | | |
| | User | | |
| | | User management | |
| | | | admin:1234 |
| | | | operate: 4321 |
| | | | guest: (Null) |
| | | Change password | |
| | | | (Null) |
| System setting | | | |
| | RS-232 | | |
| | | RS-232 setting | |
| | | | Baud rate: 115200 |
| | | | Date bit: 8 |
| | | | Stop bit: 1 |
| | | | Parity: None |
| | | | Flow ctrl: None |
| | | | Usage: ProBridge |
| | HDD | | |
| | | (NULL) | |
| | Text iInsertion | | |
| | | Text intertion | |
| | | | Enable text intertion: Disable |
| | | | (Null) |
| | Upgrade | (Null) | |
| | Configuation | (Null) | |
| | Log search | | |
| | | Log search | |
| | | | Current whole day, all day, all type |

# Glossary

| Term | Definition |
|---|---|
| Data redundancy | Writing data to two or more locations for backup and data recovery. For example, data can be stored on two or more HDDs. |
| DDNS | Dynamic DNS is a method, protocol, or network service that provides the capability for a networked device, such as a router or computer system using the Internet Protocol Suite, to notify a domain name server to change, in real time (ad-hoc) the active DNS configuration of its configured hostnames, addresses or other information stored in DNS |
| DHCP | Dynamic Host Configuration Protocol (DHCP) is a network application protocol used by devices (DHCP clients) to obtain configuration information for operation in an Internet Protocol network |
| Dual stream | Dual stream is a technology used to record high resolution video locally while transmitting a lower resolution stream over the network. The two streams are generated by the DVR, with the main stream having a maximum resolution of 4CIF and the substream having a maximum resolution of CIF. |
| DVR | Acronym for Digital Video Recorder. A DVR is device that is able to accept video signals from analog cameras, compress the signal and store it on its hard drives |
| HDD | Acronym for Hard Disk Drive. A storage medium which stores digitally encoded data on platters with magnetic surfaces |
| HTTP | Acronym for Hypertext Transfer Protocol. A protocol to transfer hypertext request and information between servers and browsers over a network |
| Hybrid DVR | A hybrid DVR is a combination of a DVR and NVR. |
| NTP | Acronym for Network Time Protocol. A protocol designed to synchronize the clocks of computers over a network. |
| NTSC | Acronym for National Television System Committee. NTSC is an analog television standard used in such countries as the United States and Japan. Each frame of an NTSC signal contains 525 scan lines at 60Hz |
| NVR | Acronym for Network Video Recorder. An NVR can be a PC-based or embedded system used for centralized management and storage for IP cameras, IP Domes and other DVRs. |
| PAL | Acronym for Phase Alternating Line. PAL is also another video standard used in broadcast televisions systems in large parts of the world. PAL signal contains 625 scan lines at 50Hz. |

| Term | Definition |
|---|---|
| PPPoE | Point-to-Point Protocol over Ethernet is a network protocol for encapsulating Point-to-Point Protocol (PPP) frames inside Ethernet frames. It is used mainly with ADSL services where individual users connect to the ADSL transceiver (modem) over Ethernet and in plain Metro Ethernet network. |
| PTZ | Acronym for Pan, Tilt, Zoom. PTZ dome cameras are motor driven systems that allow the camera to pan left and right, tilt up and down and zoom in and out |
| USB | Acronym for Universal Serial Bus. USB is a plug-and-play serial bus standard to interface devices to a host computer. |

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